DATAC Technologies LTD

Flex.View V3.1 Help Manual

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Flex.View V3.1 Help Manual

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Preface

Flex.View is part of the Flex.Win suite of programs and is an Operator Workstation for the RealFlex SCADA system. Flex.View runs on a Microsoft Windows PC located anywhere in the world, requiring only, a TCP/IP connection to the RealFlex (QNX) server.

Related documents

The following documents are related to the use of the Flex.View program.

- Flex.View Getting Started. Document reference number 5000-0001-0050.
- Flex.Builder Help Manual. Document reference number 5000-0001-0041.
- Flex.CFE Help Manual. Document reference number 5000-0001-0060.
- Flex.Gallery Help Manual. Document reference number 5000-0001-0042.
- Flex.Start Help Manual. Document reference number 5000-0001-0043.
- Flex.Language Help Manual. Document reference number 5000-0001-0044.
- Flex.Converter Help Manual. Document reference number 5000-0001-0045.

Software information

This Help Manual describes facilities contained in the Flex.View application program, version 3.1.1.

Conventions

The following conventions are used throughout this document:

➔ **The beginning of a sequence of instructions:**

1, 2, 3 etc. A set of steps in a sequence of instructions.

 A single step in an instruction.

Highlight This term defines the action of moving the cursor to illuminate an alphabetic or numeric character, word or phrase to initiate a procedure.

OR: In a sequence of instructions the text OR: is used to indicate a choice of steps. Either execute the one step before the OR: or the one step after it.

Mouse conventions

Within the text the left mouse button is assumed for all mouse operations unless otherwise stated.

Click Press and release the left-hand mouse button without moving the pointer. This action is used to select an object or perform an action.

Double-click Press and release the left-hand mouse button twice in quick succession.

Drag Press the left-hand mouse button without releasing it and then move the pointer. This action tracks the position of the mouse pointer. The action ends when the mouse button is released.

Press Press the left-hand mouse button without releasing it. This action is generally used to select an object for action.

Release Release the mouse button after pressing it. This action is generally used to conclude an action initiated by a press or a drag.

1 Flex.View Operations Overview

Flex.View is a highly efficient system for Supervisory Control and Data Acquisition (SCADA) applications for a wide range of realtime environments.

Flex.View is an Operator Workstation for the RealFlex SCADA system. Flex.View runs on a Microsoft Windows PC located anywhere in the world, requiring only, a TCP/IP connection to the RealFlex (QNX) server.

Flex.View's user-friendly interface includes dynamically updated displays, audible and visible alarms, printed reports, and straightforward control mechanisms.

Both implementation and operation of the SCADA system are centered on the Flex.View "Application Window".

By default, the Flex.View Application window and its displays take on the appearance (look and feel) of any other Microsoft Windows program. For users connected to a RealFlex4 server and wishing to retain the RealFlex4 (QNX) look and feel as used in previous versions of Flex.View, the user can switch to the RealFlex4 (QNX) look and feel via the "User Interface section" of the "Environment" options window.

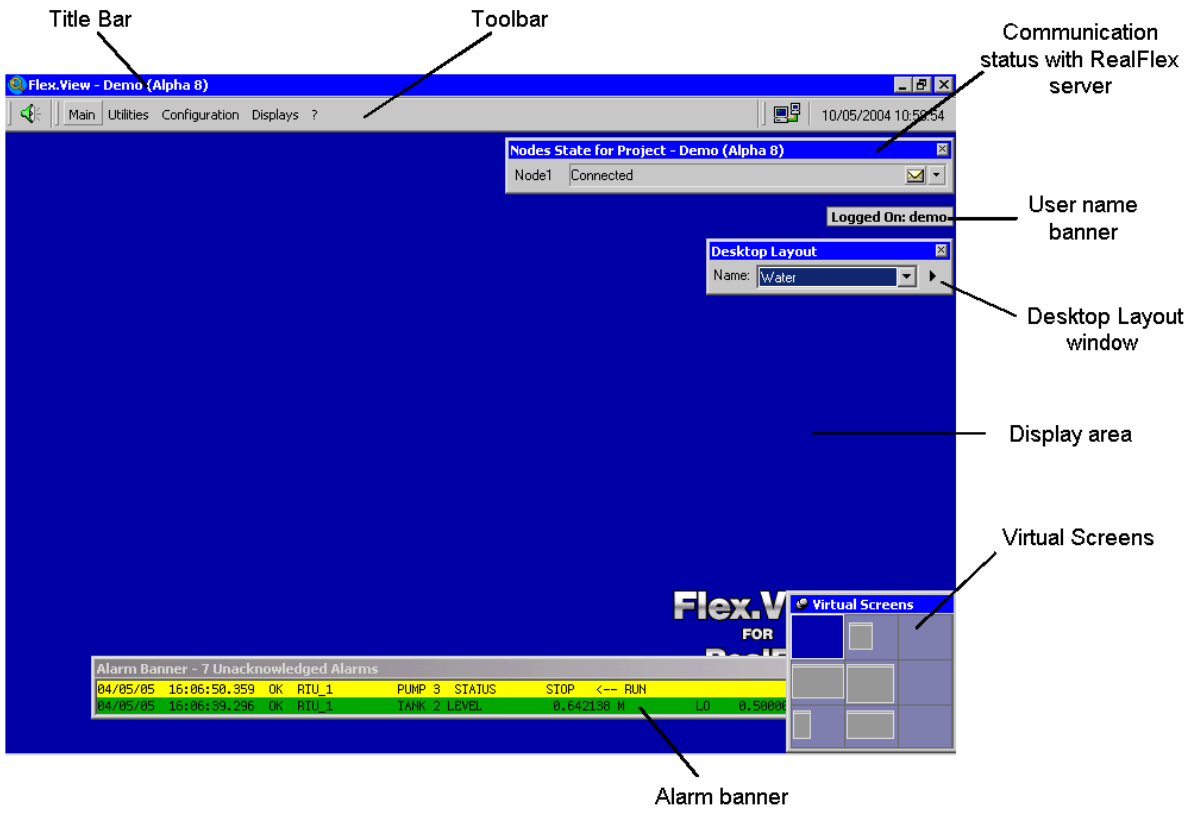


Figure 1: Flex.View application window - Microsoft Windows look and feel

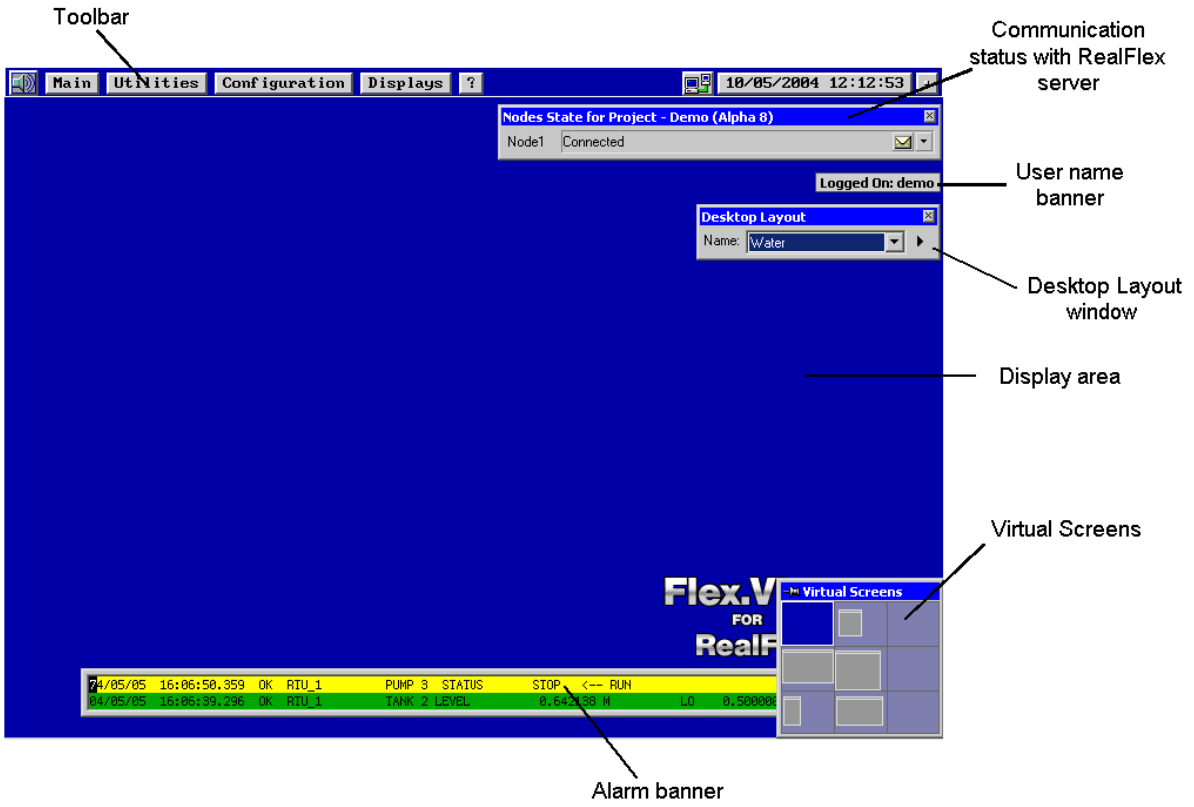


Figure 2: Flex.View application window - RealFlex4 look and feel

The Main and Displays menus provide access to the most commonly used screens and displays. The Utilities and Configuration menus allow the user to configure and access data and functions within the system.

Flex.View operations are normally carried out while viewing one or more of the "Displays" that are created by the system implementor using the Flex.Builder easy-to-use display builder.

These Displays are dynamically updated pictures, diagrams, charts and graphs that continuously display the status of the system under control. By pointing and clicking with the mouse or trackball, the operator can quickly:

1. go from one graphic display to another
2. send controls to the controllable elements of the system
3. create temporary high-visibility displays of selected system elements (for example, dynamically updated bar charts and graphs of datapoints that are close to alarm)
4. track communications performance

In the Flex.View Application window, the toolbar across the top of the window contains an on-screen button for silencing the latest audible alarm, on-screen buttons to access the Main, Utilities, Configuration, Displays and ? (Help) menus, a button displaying current state of connection to the RealFlex server, and the current date and time.

The current date and time is displayed as an on-screen button. While not connected to the RealFlex server, the clock is synchronized to the PC clock. When connected to the RealFlex server, the clock will synchronize with the clock of the RealFlex server to display local time.

The "alarm banner" displayed at the bottom of the screen contains the latest active alarms. This banner can be configured to display between 2 and 10 lines.

The Main Menu: The selections available from the Main menu provide the primary methods for accessing RealFlex summary screens, Data summary screens, Demand reports, logon/logoff selection, Flex.View version information and the ability to exit Flex.View.

RealFlex Summaries: The RealFlex Summaries selection contains the System - PCU, Communications, Active Alarms and Historical Alarm/Events Summary screens. The System - PCU selection allows the user to view all PCU's and points defined for the RealFlex system, acknowledge alarms and send controls, The Communications Summary screen displays the status of each PCU communicating with the remote devices. The Active and Historical Alarm/Event Summaries provide alarm/event data display for all points in the system or sorted by PCU name.

Data Summaries: The Data Summaries menu allows the user to view summaries of all Analog, Meter, Status, Tank, Manually Overwritten, Alarm Disabled, Control Tagged and Information Tagged points in the system.

Demand Reports: The Demand Reports option allows you to print standardized reports, access to additional RealFlex Utilities and printed summaries reflecting system data and to request a partial or complete report of the alarms.

The Utilities Menu: This menu contains the Print Window, Print Preview, Print Alarm Page, Report Scheduler, Set Server Time/Date, Project Journal and Remote Modules Help functions.

The Print Window utility allows the user to print the entire screen for capturing data values or information at a specific point in time.

The Configuration Menu: This menu contains the Open Project, Connect to Server/Disconnect, Check for Updates, Database Editor, Configuration File Editor, Historical Editor, Report Generator, Send Flex.Report File to the Server, Password Maintenance, Desktop Layouts and Printer Configuration functions. From this menu you can also access the Flex.View Application program start-up and system configuration options.

The Displays Menu: This menu provides access to graphic representations of plant processes or field data as designed by the system implementor using the Bitmap or Flex.Builder display builders.

1.1 Starting the Flex.View program

➔ **To start Flex.View:**

- Double-click on the Flex.View icon on your Desktop.

OR:

- Open a specific Project in Flex.View using the Flex.Start program. For details, please refer to the Flex.Start Help documentation.

OR:

1. Click on the

button.
2. Select **Programs**, then **Flex.View**, then click on **Flex.View**.

OR:

- From Windows Explorer, double-click on the **Flexview.exe** file in the **C:\Program Files\Datac\Flex.View** directory.

  The welcome screen will appear for an instant:

1.2 Flex.View Application window

By default, the Flex.View Application window and its displays take on the appearance (look and feel) of any other Microsoft Windows program.

Users connected to a RealFlex4 server may switch to the RealFlex4 (QNX) look and feel, as used in previous versions of Flex.View, by activating the "Enable RealFlex4 look and feel for main window and displays" check-box in the "Environment" window from the "Configuration - Options" menu. See Section 4.3.12.5.

1.2.1 For Microsoft Windows look and feel

Along the top of the Flex.View application window a Title Bar is displayed. Below that, Toolbar(s) are displayed.

1.2.1.1 Title Bar

The Title Bar contains the name of the application and the name of the currently open Project. On the right-hand side of the Title Bar there are the following buttons:

Minimize button. If this button is grayed out, then the "Allow to minimize" check-box in the "Main Window" section of the "Application" window has not been activated and the operator will not be able to minimize the main Flex.View window. See Note below.

Restore button, or Maximize button. If these buttons are grayed out, then the "Allow to resize and move" check-box in the "Main Window" section of the "Application" window has not been activated and the operator will not be able to resize the main Flex.View window. See Note below.

Close button.

Note: If the "Minimize" and the "Restore" or "Maximize" buttons are not displayed, then both the "Allow to resize and move" and "Allow to minimize" check-boxes in the "Main Window" section of the "Application" window have not been activated and the operator will not be able to resize or minimize or move the main Flex.View window. See Section 4.3.12.1.

1.2.1.2 Toolbars

The toolbars provide quick mouse access to many options and facilities used in Flex.View.

Button	Action
	Alarm sounder silence button
	Displays the Main menu options.
	Displays the Utilities menu options.
	Displays the Configuration menu options.

Displays	Displays the Select Display window.
?	Links you to the on-line Help.
»	Displays a list of hidden menus after the application window has been reduced in size.
(Flashing)	Indicates a message has been received from another logged on user. A sound accompanying the flashing button may be played if activated via the "Miscellaneous" options window, see Section 4.3.12.4.
	Indicates communications state with the RealFlex server. Clicking on this button you can find out who else is logged onto the project and send/receive messages to/from logged on users.
16/01/03 15:06:07	Displays current date and time. When not connected to the RealFlex server, time displayed will be as set on your PC clock. When connected to the RealFlex server, time displayed will be the time of the RealFlex server, i.e., local time.

➔ **To move a toolbar:**

1. Ensure the toolbar layout is unlocked. See "To lock or unlock the toolbar layout" below.
2. Position the pointer over the toolbar as shown below:

3. Press and hold the left-hand mouse button while you drag the toolbar to a suitable location or into a second or third toolbar row.
4. Release the mouse button to drop the toolbar to its new location. It will remain in this new place until you move it again.

➔ **To resize a toolbar:**

- Move the pointer over the toolbar move handle until it changes to a double-headed arrow, and then drag the edge of the toolbar.

➔ **To lock or unlock the toolbar layout:**

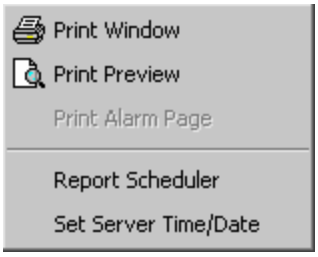
1. Right-click anywhere inside the Flex.View toolbar to display a pop-up menu.
2. ***To Lock*** - Click on the **Lock Layout of the Bar** option. A check mark appears next to the menu item.

   To Unlock - Click on the **Lock Layout of the Bar** option. The check mark is removed next to the menu item.

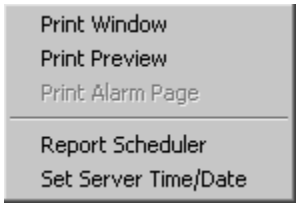
   In the Flex.View application window, a unlocked toolbar layout will display a move handle on the left-hand side of each toolbar.

➔ **To show or hide Icons in the drop-down menus:**

When you click on the "Main", "Utilities" and "Configuration" menu buttons to display their drop-down menus, you can choose to show or hide Icons alongside the menu options, as shown in the example below:



Utilities menu with Icons



Utilities menu without Icons

1. Right-click anywhere inside the Flex.View toolbar to display a pop-up menu.

2. ***To Show Icons*** - Click on the **Show Icons in Menu** option. A check mark appears next to the menu item.

   To Hide Icons - Click on the **Show Icons in Menu** option. The check mark is removed next to the menu item.

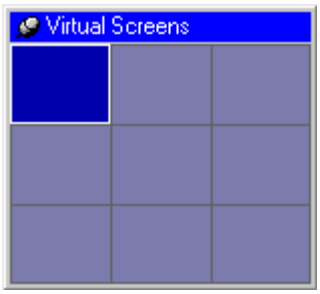
1.2.2 For RealFlex4 look and feel

A toolbar is displayed along the top of the Flex.View application window. The toolbar provides quick mouse access to many options and facilities used in Flex.View.

Button	Action
	Alarm sounder silence button
Main	Displays the Main menu options.
Utilities	Displays the Utilities menu options.
Configuration	Displays the Configuration menu options.
Displays	Displays the Select Display window.
?	Links you to the on-line Help.
...	Displays a list of hidden menus after the application window has been reduced in size.
(Flashing)	Indicates a message has been received from another logged on user. A sound accompanying the flashing button may be played if activated via the "Miscellaneous" options window, see Section 4.3.12.4.
	Indicates communications state with the RealFlex server. Clicking on this button you can find out who else is logged onto the project and send/receive messages to/from logged on users.
22/11/01 10:23:16	Displays current date and time. When not connected to the RealFlex server, time displayed will be as set on your PC clock. When connected to the RealFlex server, time displayed will be the time of the RealFlex server, i.e., local time.
	Minimize button. If this button is not displayed, then the "Allow to minimize" check-box in the "Main Window" section of the "Application" window has not been activated and the operator will not be able to minimize the main Flex.View window.

1.3 Virtual Screens

The Virtual Screens window, when activated in the "Miscellaneous" window of the "Configuration - Options" menu (see Section 4.3.12.4), is displayed in the bottom right-hand corner of a maximized Flex.View application window. An example is shown below:



If the "Virtual Screens" window is not visible, then its parameters have been set to "Auto Hide". See Section 1.3.1, "Displaying a Auto Hide Virtual Screens window".

This window contains a grid displaying thumbnail representations of selected Displays. Each grid segment represents a different view of Displays in the Flex.View application window. By clicking on a grid segment, the operator can quickly bring to view a required Display or group of Displays.

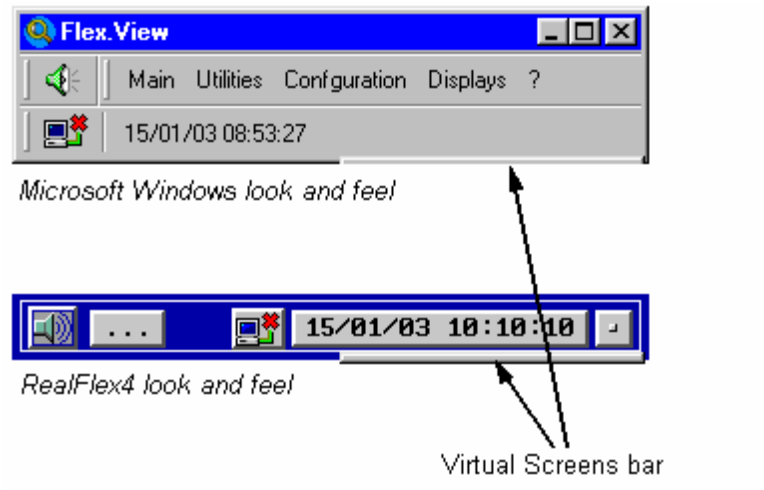
The "Virtual Screens" window can be configured to display up to 25 grid segments. See Section 1.3.4, "Setting Virtual Screen Parameters".

You can also resize the "Virtual Screens" window. See Section 1.3.5, "Resizing the Virtual Screens window".

1.3.1 Displaying a Auto Hide Virtual Screens window

To display the "Virtual Screens" window, move the mouse pointer to the bottom right-hand edge of the Flex.View application window and the "Virtual Screens" window will slide out from the right. The "Virtual Screens" window will stay in view providing the mouse pointer is positioned over the window.

If the Flex.View application window has been reduced in size, as shown below, move the mouse pointer over the bar and the "Virtual Screens" window will slide out.

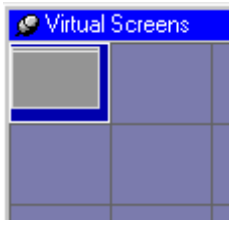


1.3.2 To add Display thumbnails to a grid segment

1. Click on any free segment in the grid as shown below.

2. Select required Display.

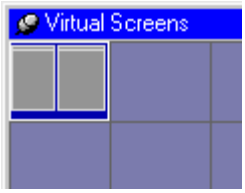
   A thumbnail representation of the Display will now be visible in the selected segment of the grid as shown below. At the same time the selected display will now be visible in the Flex.View main window.



3. Repeat steps 1 and 2 above until you have added all required Displays.

If you want to add more than one display to the same grid segment, without selecting a different segment in the grid, repeat steps 1 and 2 above to add a second and subsequent displays.

After you have added your displays to the same grid segment, resize or tile your displays as required in the Flex.View main window. The thumbnails will resize accordingly as shown below.



If you want to know the name of a Display, position the mouse pointer over the required thumbnail and a tooltip will appear displaying the name of the display. As an alternative, position the mouse pointer over the thumbnail then click right-mouse. The title of the Display will be shown in the top of the pop-up menu.

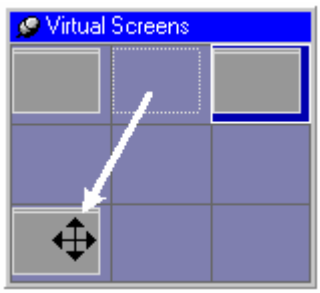
Note: If you close a display, the thumbnail will be removed from the "Virtual Screens" window.

1.3.3 To sort/arrange displays

You can sort the order of your display thumbnails within the "Virtual Screens" window by moving them to a different grid segment. You can even move several thumbnails into the same grid segment.

1. Position the cursor over the thumbnail you want to move. Click and hold-down the left mouse button, the pointer will change to a crossed double-headed arrow .

2. Move the mouse until the thumbnail is in the grid segment you require, as shown below, then release the mouse button.



3. Repeat steps 1 and 2 above to move other thumbnails.

1.3.4 Setting Virtual Screen Parameters

1. Position the mouse pointer over any of the grid positions then click right-mouse. A pop-up menu will be appear displaying **Parameters**.

2. Position the mouse pointer over the word **Parameters** and a further menu will appear.

   Options are:

   Rows Count - Used to define the number of rows in the "Virtual Screens" grid. May be set from 1 to 5 rows.

   Columns Count - Used to define the number of columns in the "Virtual Screens" grid. May be set from 1 to 5 columns.

   Always on Top - The "Virtual Screens" will always be on top regardless of how many displays are opened and closed. A check mark is displayed in the menu at the left side when activated.

   Auto Hide - The "Virtual Screens" may be locked in place and always visible to the operator, or may be set to automatically hide when the cursor is not positioned over the window. A check mark is displayed in the menu at the left side when "Auto Hide" is activated.

   As an alternative, you can toggle between Locked and Auto Hide by clicking on the symbol in the top left-hand corner of the "Virtual Screens" window as shown below.

Auto Hide

Locked

   Reset to Predefined - Allows you to reset the "Virtual Screens" parameters to default settings, e.g., 3 rows, 3 columns and Auto Hide.

1.3.5 Resizing the Virtual Screens window

Depending on the number of segments displayed in the Virtual Screens window, you may find it useful to resize the window.

➔ **To resize the Virtual Screens window:**

1. Move the mouse pointer over the top edge, left-hand edge or top left-hand corner of the window. The pointer becomes a double-headed arrow.

2. Drag the window border until the window is the desired size, then release the button.

1.4 Desktop Layouts

The "Desktop Layouts" option from the "Configuration" menu displays a "Desktop Layout" window in the Flex.View application window. An example is shown below:

From this window a user can store a number of different desktop layouts and recall them as and when required.

If your system employs a large number of displays, this feature is most useful as it allows you to divide your system into groups of displays. For example, you could define a desktop layout that represents the system overview and then define a number of other desktop layouts that represent each control zone within your system.

Note: This function must first be enabled via the "Miscellaneous" window of the "Configuration - Options" menu. You must be connected and logged onto the RealFlex server before you can save, delete or recall Desktop Layouts.

1.4.1 To enable the Desktop Layout feature

1. From the **Configuration** menu, select the **Options** option.

2. From the expandable/collapsible hierarchy of options, click on the **Miscellaneous** option. The "Miscellaneous" window will appear.

3. In the "Features" section, click on the "Enable Desktop Layouts" check-box. A tick will appear when enabled. Click again to disable (no tick).

   If you want to display the "Desktop Layout" window at this point, click on the "Show Desktop Layouts window" check-box. A tick will appear when enabled. Click again to disable (no tick).

4. Click on the **Apply** button.

   The "Desktop Layouts" option in the "Configuration" menu will now become active.

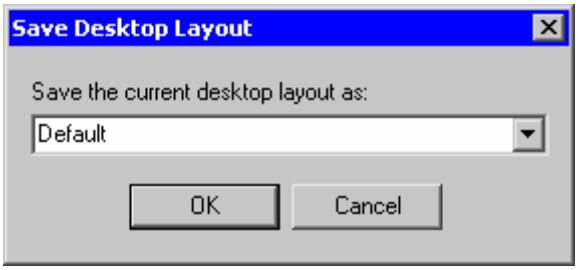
1.4.2 To save a Display Layout

1. Design your display layout by opening required Displays and arranging them in the order you require. For example, you could resize and reposition the displays in a single window or you could use the Virtual Screens to define your layout.

2. From the "Desktop Layout" window, click on the (Show control buttons) button. The window will change to display the control buttons:

3. Click on the (Save current layout) button.

   The "Save Desktop Layout" dialog box will appear:



In this dialog box, "Default" is displayed in the "Save the current desktop layout as:" field. The "Default" layout is accessible to all users and is used in conjunction with the "Restore the default desktop layout at logoff" option in the "User Options" window. See Section 4.3.12.15.

4. If you want to save your layout as the "default" layout, click on the **OK** button. A prompt will appear asking for your confirmation. Click on the **OK** button to overwrite the existing layout, or click on the **Cancel** button to abort the operation.

   OR:

   If you want to save your layout as the new layout, enter a name for the layout in the "Save the current desktop layout as:" field, then click on the **OK** button.

   The Display layout will be saved with your user profile.

1.4.3 To delete a saved Display Layout

Note: You will not be able to delete the "Default" layout.

1. From the "Desktop Layout" window, click on the (Show control buttons) button.

2. Click on the button to the right of the "Name" field and from the drop-down list, select the layout you want to delete.

3. Click on the (Delete saved layout) button.

   A prompt will appear asking for your confirmation.

4. Click on the **OK** button to delete the layout, or click on the **Cancel** button to abort the operation.

   Selecting **OK** will delete the Display layout from your user profile.

1.4.4 To change an existing Display Layout

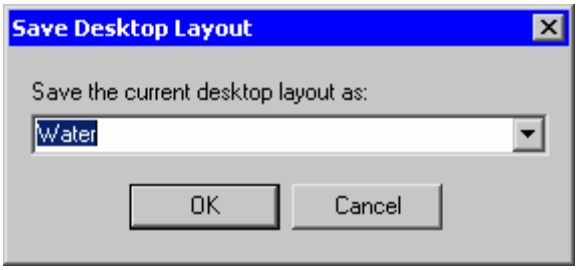
1. From the "Desktop Layout" window, click on the button to the right of the "Name" field and from the drop-down list, select the layout you want to change.

2. Redefine your display layout.

3. From the "Desktop Layout" window, click on the (Show control buttons) button.

4. Click on the (Save current layout) button.

   The "Save Desktop Layout" dialog box will appear:



The name of the layout you wanted to change should be displayed in the "Save the current desktop layout as:" field. If you want to overwrite a different layout, click on the button and from the drop-down list, select the layout you want to overwrite.

5. Click on the **OK** button. A prompt will appear asking for your confirmation. Click on the **OK** button to overwrite the existing layout, or click on the **Cancel** button to abort the operation.

1.4.5 To select a saved Display Layout

- From the "Desktop Layout" window, click on the button to the right of the "Name" field and from the drop-down list, select required layout.

1.5 Communications status with RealFlex server

The button on the Flex.View application toolbar provides you with a visual indication for the connection status with the RealFlex server.

Through this button you can also:

- See who else is logged onto the same project
- See which other user has access to the same zones as you
- Send messages to logged on users
- Receive messages from logged on users

Communication status visual indicators are as shown in the table below:

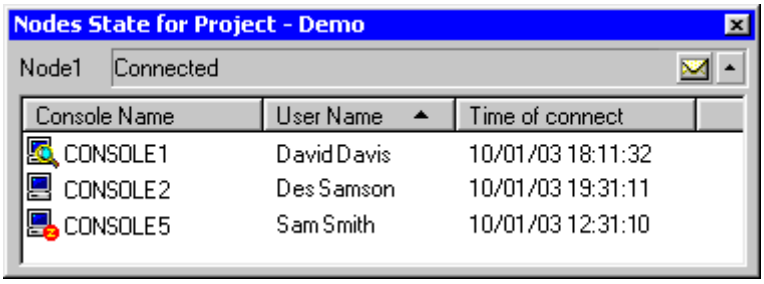
Indicator	State
	Not connected to RealFlex server.
	Connected to Main RealFlex server.
	Connected to backup RealFlex server.
	Local simulation on Windows PC.

When you click on this button, the following dialog box will appear:

This dialog box will inform you in plain language, the current nodes state for the project.

1.5.1 To find out who else is logged onto the project

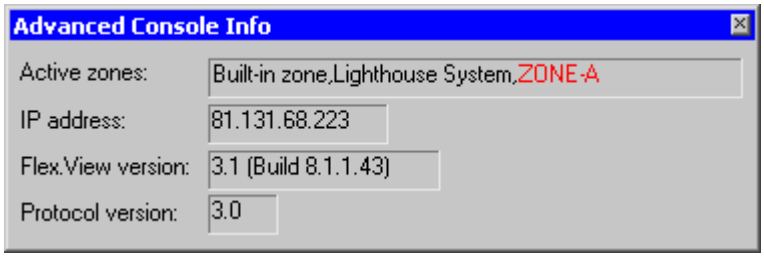
- From the "Nodes State for Project" dialog box, click on the button and the dialog box will expand to display a list of other users currently logged onto the project. An example is shown below.



Note: The red circle with a yellow "Z" appended to the console symbol warns you that the other user has access to the same zone(s) as you and could cause changes in that zone without you knowing it.

To collapse this dialog box, click on the button. To close this dialog box, click on the button in the right-hand side of the title bar.

If you double-click on any of the listed users, the following dialog box will appear displaying Advanced Console Information:



The significance of each field is:

Active zones: Lists the zones assigned to the user. If there is more than one zone assigned to the user they will be listed with a coma "," separating the zones, e.g., "Built in zone, ZONE A, ZONE B". Note: Zones shown in red text warns you that the user has access to the same zone as you and could cause changes in that zone without you knowing it.

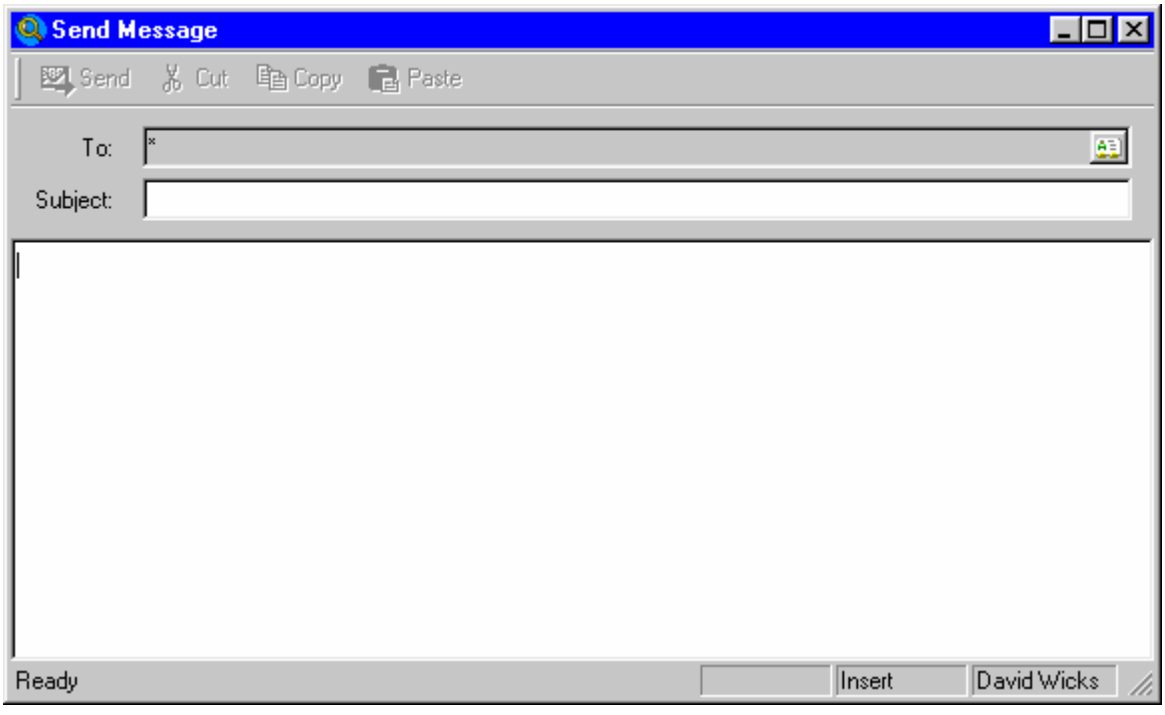
IP address: Lists the IP address of the console Flex.View is connected to. This IP address can be thought of as a house address that a postman uses to deliver mail. The computer uses the IP address to know where to address and exchange information. Each computer on any network has a unique IP address.

Flex.View version: The Flex.View software version number and build number used by the logged on user.

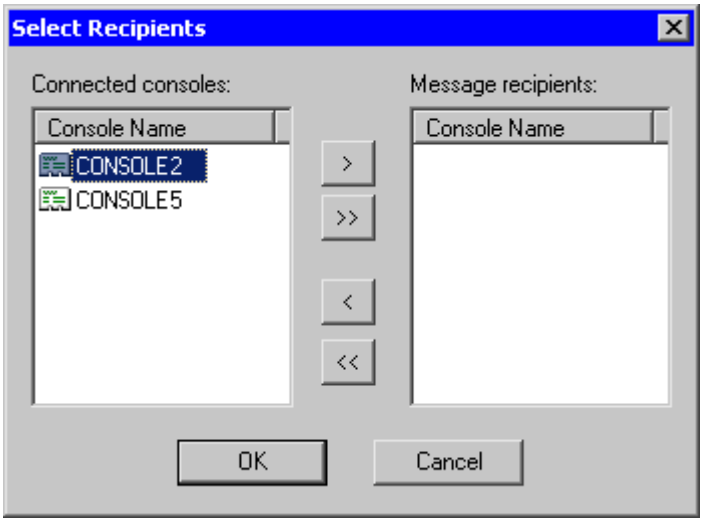
Protocol version: The protocol version of Flex.View.

1.5.2 To send a message to logged on users

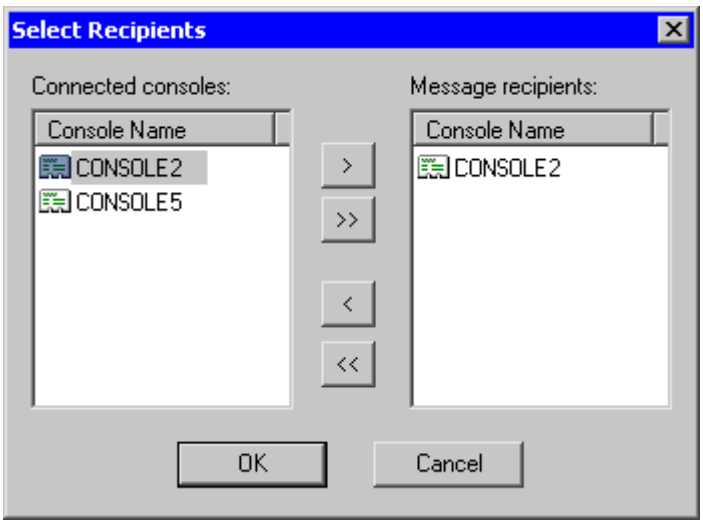
1. From the "Nodes state for project" dialog box, click on the button. The "Send Message" window will appear:



2. You can choose to send a message to all the users, an individual user or a selected number of users. In the "To" field, an asterisk (*) is displayed to signify that the message will be sent to all currently logged on users. If you want to send a message to an individual user or a selected number of users, click on the (Address book) button to display the "Select Recipients" window:



3. In the "Select Recipients" window, a list of all other currently logged on users are shown in the "Connected consoles" field. Click on a user and click on the button. The selected name will appear in the "Message recipients" field as shown below:



4. To select all users, click in the button. To remove users from the "Message recipients" field, use the or buttons.

5. Click on the **OK** button to accept, or click on the **Cancel** button to abort the operation. You will be returned to the "Send Message" window where the selected users will be displayed in the "To:" field.

6. In the "Send Message" window, type in a topic in the "Subject:" field then type in your message in the field below. The "Cut", "Copy" and "Paste" buttons can be used in the normal way to edit your text message.

7. To send your completed message, click on the

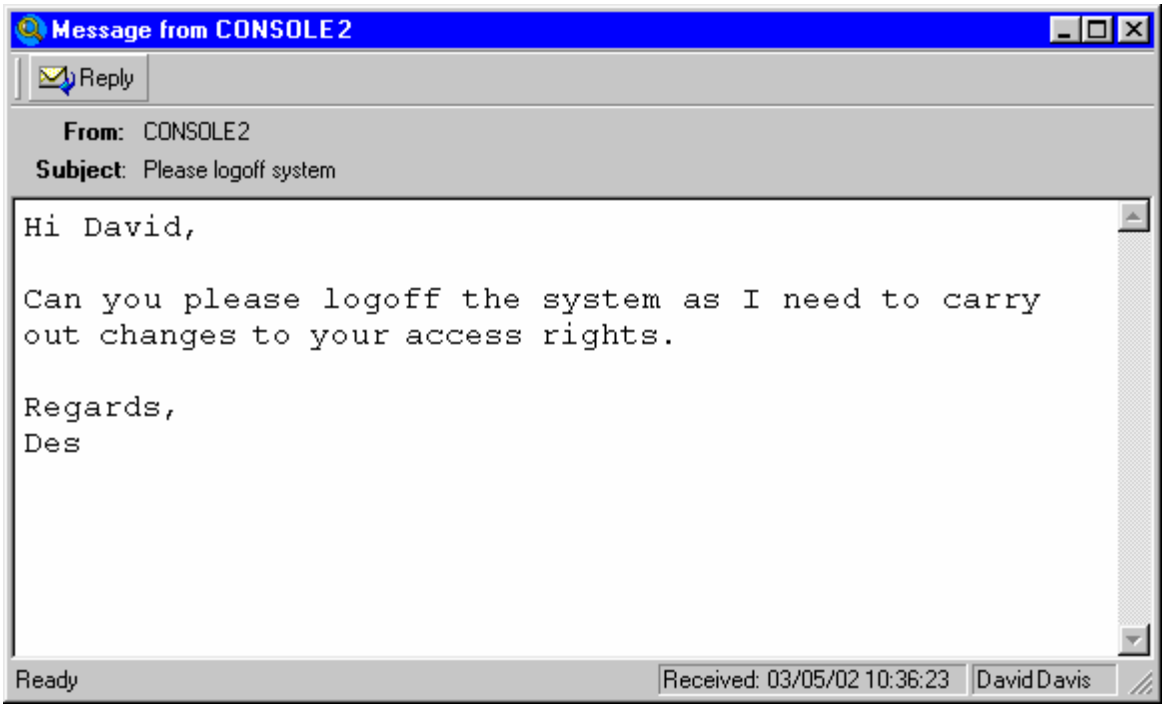
button. The message will be transmitted via the Flex.Serv application to the selected recipients.

1.5.3 Receiving a message from a logged on user

When a message is sent to your console, a flashing button will appear on the Flex.View application toolbar. A sound accompanying the flashing button may be played if activated via the "Miscellaneous" options window.

➔ **To read the message:**

- Click on the button. A "Message from..." window will appear as shown in the example below:



➔ **To send a reply:**

- Click on the

button. The "Send Message" window will appear where you can send your reply in the same way as sending a message to a logged on user shown above.

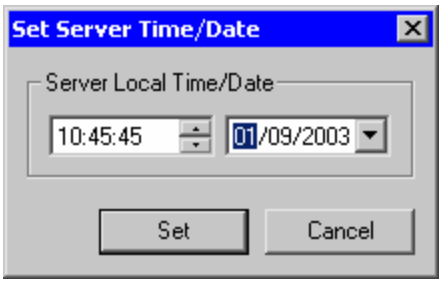
1.6 Setting the Server Time and Date

The "Set Server Time/Date" option allows a Flex.View user to set the Time and Date on the RealFlex Server.

Note: Access to this option may be disabled or protected by a password. For details on user level access, please refer to Section 1.8.4, “Password Maintenance“.

➔ **To set the Server time and date:**

1. From the **Utilities** menu, select the **Set Server Time/Date** option. The "Set Server Time/Date" dialog box will appear:



2. Set the time and/or date for the RealFlex server. For details, please refer to Section 1.7.13.

3. Click on the **Set** button to apply the new time and date, or click on the **Cancel** button to abort the operation.

Caution must be exercised when changing the date or time, because several programs are executed on a time basis.

For example:

- A report might be automatically scheduled to run at 07:00 a.m. each morning. If the time is changed at 07:01 a.m. back to 06:59 a.m., the report will be printed again. This may not create any specific problem unless some database points or counters are reset at the same time. It may cause the loss of two minutes of valuable data.

- Any time the Historical Data Collection subsystem is active and the date or time is changed in a backward direction, you will record items in historical collection with double time stamps.

- A separate, time-initiated task is activated via the **rptcron** file that will automatically read the hardware clock and reset the internal system software time at a specified daily interval (usually at two minutes after midnight). Caution should be exercised so as not to change the date or time precisely when this program would be executed.

1.7 Using Flex.View Windows

Flex.View uses both the standard Microsoft Windows and the RealFlex4 QNX open-look standard. In general, the operator will not need to know more than the basics of the Microsoft Windows and QNX open-look standards, and will need to know very little concerning the characteristics of the windows themselves. However, the operator should be aware of a few capabilities that the Microsoft and QNX windowing software affords within the Flex.View operator environment:

1.7.1 Displays

Flex.View displays are dynamic representations developed by the system implementor to depict the system's application parameters and/or station schematics.

As many of these displays may be built as are needed (limited only by hard disk space), and user-friendly techniques are provided for accessing the displays, and switching from one display to another.

While in realtime display mode, user-defined, graphic displays may be recalled for viewing by four mechanisms:

1. Via the Select Displays window which is accessible through the **Displays** menu.

2. Via Display Links.

3. Via the Virtual Screens window.

4. Via the Desktop Layouts window.

If you wish to send a particular display to the back of the workspace (to uncover other windows that may be behind it), click on the **To Back** on-screen button.

Note: Although you may have more than one display opened at a time, there is a maximum memory allocation set for Displays. When the maximum has been reached, you will see the message: "Not Enough Memory. Close one or more windows".

1.7.2 Resizing and moving the Main Flex.View window

During the operation of Flex.View, you may find it useful to reduce the size of the Flex.View window, and/or move it to a different location on the screen. For example, it may be desirable to simultaneously view another application you have running, in which case, you could reduce the size of each, and move each to a different side of the screen.

➔ **To resize or move the Main Flex.View window:**

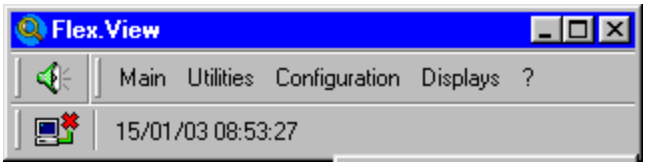
For Microsoft Windows look and feel:

1. Click on the (Restore) button in the right-hand side of the applications Title Bar.

   OR:

   Right-click on the

   icon at the bottom of your screen and select **Restore** from the pop-up menu. The Main Flex.View window will reduce in size as shown in the example below, but any open displays, the Alarm banner, Nodes State for Project window and the User Name banner will remain in their original size and positions until they are individually closed or moved.



2. Move the mouse pointer over the edge or corner of the reduced window. The pointer becomes a double-pointed arrow.

3. Drag the window border until the window is the desired size, then release the button.

4. Move the window by clicking on an open area of the Title Bar, and drag the window to the required position in the screen.

For RealFlex4 look and feel:

1. Right-click on the

icon at the bottom of your screen and select **Restore** from the pop-up menu.

   The Main Flex.View window will reduce in size as shown in the example below, but any open displays, the Alarm banner, Nodes State for Project window and the User Name banner will remain in their original size and positions until they are individually closed or moved.

2. Move the mouse pointer over the edge or corner of the window. The pointer becomes a double-pointed arrow.

3. Drag the window border until the window is the desired size, then release the button.

4. Move the window by clicking on an open area of the Menu Bar, and drag the window to the required position in the screen.

1.7.3 Resizing and moving Display or Summary windows

During the operation of Flex.View, you may find it useful to reduce the size of a Display or a Summary window, and/or to move it to a different location on the screen. For example, it may be desirable to simultaneously view two different Displays or Summaries, in which case, you could reduce the size of each, and move each to a different side of the screen.

➔ **To resize or move a Display or Summary window:**

Method 1:

1. Move the mouse pointer over the edge or corner of the window. The pointer becomes a double-pointed arrow.

2. Drag the window border until the window is the desired size, then release the button.

3. Move the window by clicking on an open area of the Title Bar, and drag the window to the required position in the screen.

Once you have changed the size or location of a window, you may want that window to always appear as you have set it. Right-click on the open window and select **Properties** from the pop-up menu. When the "Display Properties" or “Summary Properties” window appears, select **Save**.

Method 2:

Resize or move a display via the "Display Properties" window, see Section 4.4.2, or resize or move a summary window via the “Summary Properties” window, see Section 2.4.4.

1.7.4 Panning and Zooming within displays

Zooming

➔ **To zoom in on a display:**

There are three ways in which you can zoom in:

1. Press and hold-down the **Ctrl** key, the pointer turns into a magnifying glass. Drag a box around the area you want to zoom in to see.

   The larger the box, the more you see of the page, so the less you are zoomed in.

   The smaller the box, the less you see of the page, so the more you are zoomed in.

2. Position the pointer in the centre of the area you want to zoom into, right-click and select **Zoom In** from the pop-up menu.

3. Press and hold-down the **Ctrl** key, the pointer turns into a magnifying glass. Clicking the left mouse button reduces the view. The new view is centered wherever you click.

With methods 2 and 3 above, each action will zoom in by approximately 60% of the previous screen view. Repeat the process to step in closer.

➔ **To zoom out:**

There are two ways in which you can zoom out:

1. Right-click and select **Zoom Out** from the pop-up menu. Each action will zoom out in steps. Repeat the process to step out further.

2. Press and hold-down the **Ctrl** key, the pointer turns into a magnifying glass. Clicking the right mouse button reduces the view. The new view is centered wherever you click.

➔ **To return the window to the original size and position:**

 Right-click and select **Zoom Off** from the pop-up menu.

Note: You can also zoom in or out using the "Display Properties" window, see Section 4.4.2.

Panning

➔ **To pan:**

 Press and hold-down the **Shift** key, the pointer turns into an open hand. Click left mouse button without releasing it and move the view to position required.

Once you have changed the Display settings, you may want that window to always appear as you have set it. Right-click on the open window and select **Properties** from the pop-up menu. When the "Display Properties" window appears, select **Save**.

Note: You can also pan using the "Display Properties" window, see Section 4.4.2.

1.7.5 Using scroll bars

Some of the windows used by Flex.View have scroll bars. These are graphical objects along the side and/or bottom of a window, which can be used to move the contents of the window so that a different portion of the contents may be viewed.

To scroll a line or column at a time, click on one of the small triangles in the control button of the scroll bar.

To scroll a page at a time, click on the bar itself.

To scroll to a specific portion of the display, place the cursor on the slider in the middle of the bar, press and hold down the select button on the mouse, and drag the slider button along the scroll bar, releasing the select button when the desired location is reached.

1.7.6 Closing Displays and other windows

For Microsoft Windows look and feel:

- Click on the (Close) button in the right-hand side of the Title Bar.

Note: Alternative methods of closing Displays and other windows are:

- Right-click on the Title Bar at the top of the window and select **Close** from the pop-up menu.
- Double-click the windows Control menu button .
- With the window active, key **Alt+F4**.

For RealFlex4 look and feel:

- Click on the (Close) button in the upper left-hand corner of the window.

Note: Alternative methods of closing Displays and other windows are:

- Right-click on the Title Bar at the top of the window and select **Close** from the pop-up menu
- With the window active, key **Alt+F4**.

1.7.7 Minimizing and maximizing the Main Flex.View window

➔ **To minimize the Main Flex.View window:**

For Microsoft Windows look and feel:

- Click on the button in the right-hand side of the applications Title Bar.

Use this command to reduce the application window to a

icon at the bottom of your screen.

Note: If the button is grayed out in the Title Bar of the Flex.View application window, then the "Allow to minimize" check-box in the "Main Window" section of the "Application" window (see Section 4.3.12.1) has not been activated and the operator will not be able to minimize the main Flex.View window.

For RealFlex4 look and feel:

- Click on the button in the upper right-hand corner of the application window.

Use this command to reduce the application window to a

icon at the bottom of your screen.

Note: If the button is not visible in the upper right-hand corner of the Flex.View application window, then the "Allow to minimize" check-box in the "Main Window" section of the "Application" window (see Section 4.3.12.1) has not been activated and the operator will not be able to minimize the main Flex.View window.

➔ **To maximize the Main Flex.View window:**

- Click on the

icon at the bottom of your screen, or right-click on the icon and select **Maximize** from the pop-up menu.

1.7.8 Minimizing and maximizing Displays and other windows

A Flex.View display, and the operation executing within it can often be set aside while another window is being viewed, then rapidly redisplayed when it is needed.

Note: When a Display is minimized, the activity executing within it is still using computer memory and Central Processing Unit (CPU) time. To prevent system overload, avoid excessive use of this feature.

For Microsoft Windows look and feel:

➔ **To minimize a window:**

- Click on the button in the right-hand side of the Displays Title Bar.

  Use this command to reduce the window to an icon similar to the one shown below. This icon can be moved anywhere on the screen.

➔ **To maximize (or Restore) a window:**

- Click on the icon and select **Maximize** or **Restore** from the pop-up menu, or click on the or button.

When Maximized, the window will fill the Flex.View Application window. When Restored, the window will return to the size and location it had before it was minimized.

A minimized window can also be restored by placing the pointer on the icon and clicking twice in rapid succession (i.e., double-clicking).

For RealFlex4 look and feel:

➔ **To minimize a window:**

 Click on the button in the upper right-hand corner of the Display window.

Use this command to reduce the window to an icon similar to the one shown below. This icon can be moved anywhere on the screen.

➔ **To maximize (or Restore) a window:**

 Click on the icon and select **Maximize** or **Restore** from the pop-up menu, or click on the or button.

When Maximized, the window will fill the Flex.View Application window. When Restored, the window will return to the size and location it had before it was minimized.

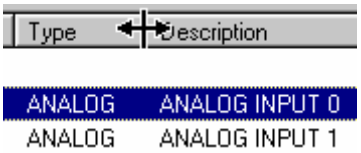
A minimized window can also be reopened by placing the pointer on the icon and clicking twice in rapid succession (i.e., double-clicking).

1.7.9 Adjusting the width of the columns

Many of the Microsoft Windows type dialog boxes have columns of data. For example, the "Database Editor" and "Report Scheduler".

In these dialog boxes you can manually adjust the width of the columns.

1. Position the pointer on the edge of a column. The pointer becomes a double-pointed arrow with vertical bar as shown below.



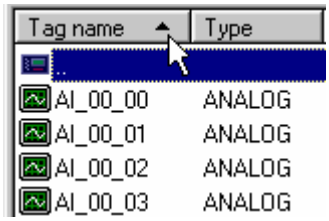
2. Click and hold down the left mouse button and drag the column edge until it is the desired width, then release the button.

1.7.10 Sorting data

Many of the Microsoft Windows type dialog boxes have columns of data. For example, the "Database Editor" and "Report Scheduler".

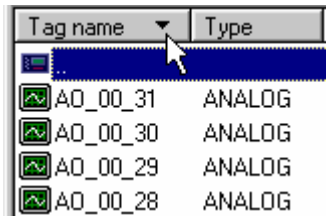
In these dialog boxes you can rearrange the rows of the list based on the values in the list by sorting. When you sort, Flex.View rearranges the rows based on the contents of a column. You can sort data in a column in ascending (1 to 9, A to Z) or descending (9 to 1, Z to A) order.

1. Click on a column caption button as shown in the example below.



The data in the list will initially be sorted in ascending order. An up arrow on the caption button will indicate that the column has been used to sort data in ascending order.

2. To sort the data in descending order, click on the column caption button again.



A down arrow on the caption button will indicate that the column has been used to sort data in descending order.

1.7.11 Cursor control by keyboard

If for some reason the mouse has become non-operational, a user may manipulate the cursor and select items by means of the keyboard, this is providing the "Enable cursor control by keyboard" option in the "Miscellaneous" window of the "Configuration - Options" menu has been activated.

➔ **To move the cursor**

 Press and hold-down the **Ctrl+Shift** keys and press any of the arrow keys.

➔ **To select**

 Press and hold-down the **Ctrl+Shift** keys and press the **Enter** key.

➔ **To display a Poke Points or pop-up menu**

 Press and hold-down the **Alt** key and press the **Enter** key.

1.7.12 Entering data

You will enter data and make choices in a number of different ways while using Flex.View. The most common methods are described here. For specific details of data entry refer to the help information corresponding to the required task.

There are two buttons that appear on the data input windows:

OK or **Apply**- If you click on "OK" or "Apply" button after you have input data to a window the data will be saved.

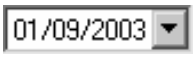
Cancel - If you click on the "Cancel" button after you have input data into a window the data is not saved and you are returned to the previous window.

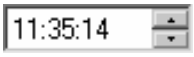
If you enter data and then use a navigation button to go to another data input window (on the next level down) the data you entered is automatically saved. If you return to the window that you used the navigation button from, the data still appears in the window as you entered it. If you now use the Cancel button to dismiss the window the data you previously entered is still saved.

Some data input windows have spinner buttons for selecting items for further definition. If you click repeatedly on the up or down arrow button the selection will appear in the field to the left of the arrows in ascending or descending order as appropriate. The spinners also respond to the keyboard up and down arrows.

Some fields have a down arrow button. Clicking on this button will display a drop-down list of choices, or in the case of a Date field, a calendar for choosing a date.

1.7.13 Setting Date and Time fields

Some Flex.View windows and dialog boxes have Date fields 

and Time fields 

. From these fields you can reset the date and time as required.

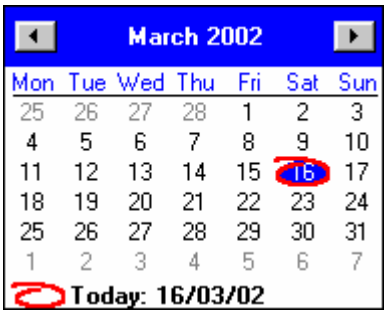
➔ **To set a Date:**

Method 1:

- Click on and highlight the portion of the date and type in the required date. Shown in the format DD/MM/YYYY.

Method 2:

1. Click on the button to display a calendar as shown in the example below.



2. Click on the or arrows to scroll through the months.

   OR:

   Select required month by clicking on the name of the Month shown at the top of the calendar. A pop-up list showing all months will be displayed. Click on the required month in the list.

3. Select required year by clicking on the Year shown at the top of the calendar. Spinner buttons will appear allowing you to select the required year.

4. With the required month displayed, select required day by clicking on the day in the calendar.

➔ **To set a Time:**

Method 1:

- Click on and highlight the portion of the time in the time field and type in the required time. Shown in the format HH/MM/SS.

M*ethod 2:*

- Click on and highlight the portion of the time in the time field and use the spinner buttons to select the required time.

1.8 User Logon/Logoff

When User ID and password security has been implemented for your Flex.View application, system operators completing their work shift or otherwise leaving their console unattended should "Log off" from the RealFlex server. Similarly, operators just starting a work shift or returning to an unattended console should "Log on".

The User ID is the label that identifies you to RealFlex, and it is used publicly in many places in the system.

RealFlex employs two different systems of applying user and password security:

Standard security (Default): allows User IDs to be added, changed or removed from the system and to allow certain Flex.View options to be selectively enabled, disabled or secured by a password for each user.

Enhanced security: allows User Groups and User IDs to be added, changed or removed from the system and to allow certain Flex.View options to be selectively enabled, disabled or secured by a password at a user group level. **Note:** The Enhanced security system was introduced as an option for systems using the RealFlex4.3I software in combination with the Flex.Serv V8.23 application software.

User logon/logoff activities are recorded as events in the Historical Alarm/Event Summary. These events, in turn, can be used for retracing problems and/or responsibilities.

Note: You must be connected to the RealFlex server before you can log on.

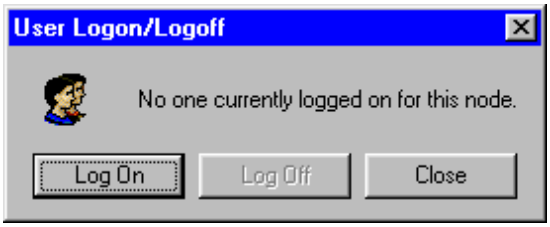
1.8.1 User Logon/Logoff - Standard security

System operators completing their work shift or otherwise leaving their console unattended should "Log off" from the RealFlex server. Similarly, operators just starting a work shift or returning to an unattended console should "Log on".

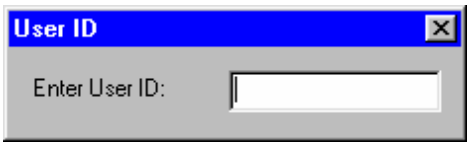
1.8.1.1 To log onto the RealFlex server

For Microsoft Windows look and feel:

1. From the Main menu, select the User Logon/Logoff option. The "User Logon/Logoff" dialog box is displayed:



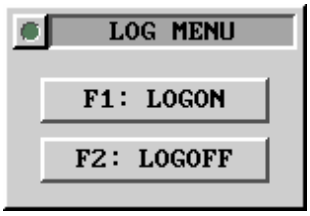
2. Click on the **Log On** button. The "User ID" pop-up is displayed:



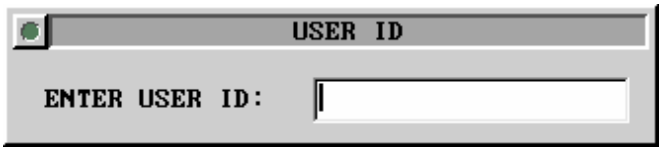
3. Enter your user ID in the "Enter User ID:" field, and press **Return**. User ID's are not echoed to the screen while being entered.

For RealFlex4 look and feel:

1. From the **Main** menu, select the **User Logon/Logoff** option. The "LOG MENU" pop-up is displayed:



2. From the "LOG MENU", select **LOGON**, or press **F1**. The "USER ID" pop-up is displayed:



3. Enter your user ID in the "ENTER USER ID:" field, and press **Return**. User ID's are not echoed to the screen while being entered.

Flex.View will make contact with the RealFlex server to retrieve your User Profile.

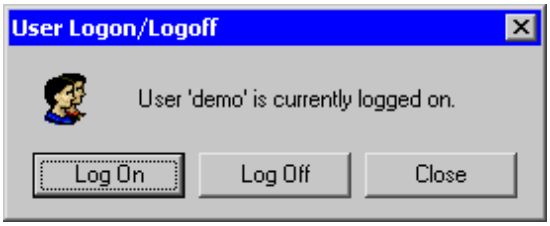
If no error message appears, the logon was successful. The passwords associated with the logged on user remains active until that user logs off, or another user logs on, even if the system is rebooted.

See also, "Shared zones" (Section 1.8.3) and "Password protection" (Section 1.8.4).

1.8.1.2 To log off from the RealFlex server

For Microsoft Windows look and feel:

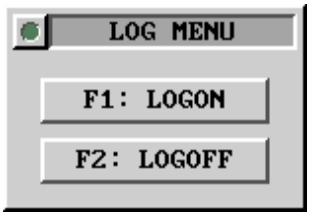
1. From the **Main** menu, select the **User Login/Logoff** option. The "User Logon/Logoff" pop-up is displayed:



2. Click on the **Log Off** button.

For RealFlex4 look and feel:

1. From the **Main** menu, select the **User Login/Logoff** option. The "LOG MENU" pop-up is displayed:



2. From the "LOG MENU", select **LOGOFF**, or press **F2**.

Flex.View will make contact with the RealFlex server to save your User Profile and log you off the system.

1.8.2 User Logon/Logoff - Enhanced security

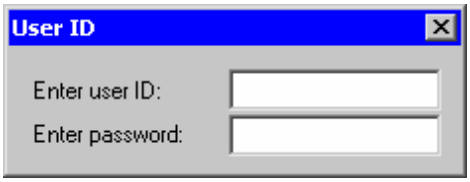
System operators completing their work shift or otherwise leaving their console unattended should "Log off" from the RealFlex server. Similarly, operators just starting a work shift or returning to an unattended console should "Log on".

1.8.2.1 To log onto the RealFlex server

For Microsoft Windows look and feel:

1. From the **Main** menu, select the **User Logon/Logoff** option. The "User Logon/Logoff" dialog box is displayed:

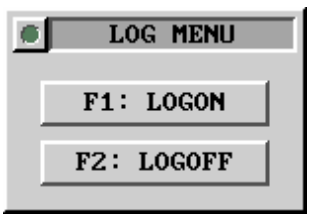
2. Click on the **Log On** button. The "User ID" pop-up is displayed:



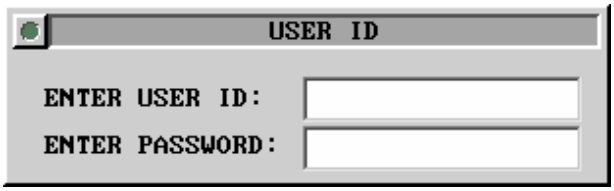
3. Enter your user ID in the "Enter user ID:" field and your password in the "Enter password:" field, and press **Return**. User ID's and password are not echoed to the screen while being entered.

For RealFlex4 look and feel:

1. From the **Main** menu, select the **User Logon/Logoff** option. The "LOG MENU" pop-up is displayed:



2. From the "LOG MENU", select **LOGON**, or press **F1**. The "USER ID" pop-up is displayed:



3. Enter your user ID in the "ENTER USER ID :" field and your password in the "ENTER PASSWORD :" field, and press **Return**. User ID's and passwords are not echoed to the screen while being entered.

Flex.View will make contact with the RealFlex server to retrieve your User Profile.

If no error message appears, the logon was successful. The password associated with the logged on user remains active until that user logs off, changes their password, or another user logs on.

Notes:

1. When a user is logging on for first time and the "User must change password at next login:" option has been activated in their "Security User Maintenance" dialog box (See Section 4.3.9.2), he/she will be forced to change their password.

2. When a users password has a lifetime period set, a message will be displayed to give them a warning that their password will shortly expire.

   If the user allows their password to expire, they will not be allowed to logon. The user will need to ask a member of the Administrators group to reset their password before they are allowed to log onto the system.

3. Depending on the settings in the "Security Settings" dialog box (See Section 4.3.9.2), a user may be restricted to the number of times, and/or have a defined time period in which they can attempt to logon to the system before they are locked out. The user will have to wait for the lockout to timeout before they can attempt to logon again.

4. If the Administrator has disabled a User ID, the user will not be able to log onto the system. A message "Bad user ID or password, Access denied" will be displayed.

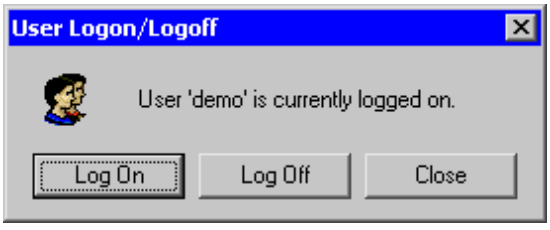
5. If another user is currently logged onto the system and the "Current user must logoff:" option is active in the "Security Settings" dialog box for their user group (See Section 4.3.9.2), the currently logged on user must logoff the system before any other user is allowed to logon.

6. See also, "Shared zones" (Section 1.8.3) and "Password protection" (Section 1.8.4).

1.8.2.2 To log off from the RealFlex server

For Microsoft Windows look and feel:

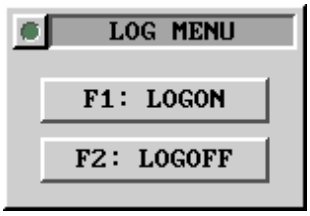
1. From the **Main** menu, select the **User Login/Logoff** option. The "User Logon/Logoff" pop-up is displayed:



2. Click on the **Log Off** button.

For RealFlex4 look and feel:

1. From the **Main** menu, select the **User Login/Logoff** option. The "LOG MENU" pop-up is displayed:



2. From the "LOG MENU", select **LOGOFF**, or press **F2**.

Flex.View will make contact with the RealFlex server to save your User Profile and log you off the system.

Note: When the "Current user must logoff:" option is active in the "Security Settings" dialog box (See Section 4.3.9.2), the currently logged on user must logoff by typing his/her own User ID and password before another user can logon.

1.8.3 Shared zones

After you have logged on and another user is already logged onto the system and shares the control of one or more of your assigned zones, a message similar to the one shown below will be displayed informing you of those users and the zones they control:

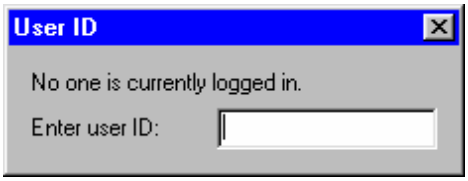
The "User Name Banner", if active, will also display a red background when another user shares the control of your assigned zones. Refer to the "Communications status with RealFlex server" topic for additional information about shared zones with others.

1.8.4 Password protection

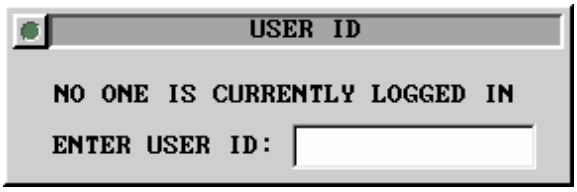
Flex.View with Standard security system

When password protection is in effect, and someone who is logged on attempts to access a password protected feature, he or she will be prompted to enter a password. A different password may be defined for each password protected feature, and for each user. For example, user "Joe" may have to enter the password "dibble" to access the Database editor and "bumper" to access the CRT Builder, while "Jane" may have to enter "strive" to access the Database editor and "nirvana" to access the CRT Builder.

If password protection is in effect and no one is logged on, when someone attempts to access a password protected feature, the following "User ID" window will appear instead of the Password prompt:



Microsoft Windows look and feel

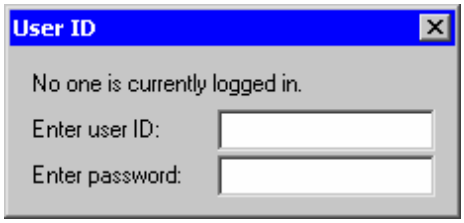


RealFlex4 look and feel

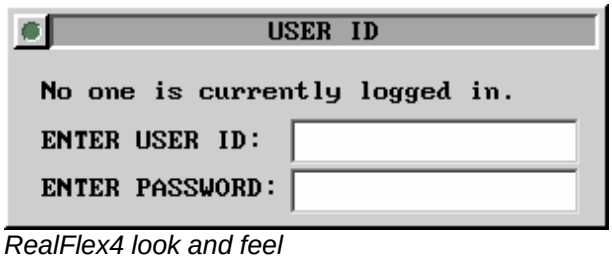
Flex.View with Enhanced security system

When password protection is in effect, and someone who is logged on attempts to access a password protected feature, he or she will be prompted to enter their User password. A different password may be defined for each user.

If password protection is in effect and no one is logged on, when someone attempts to access a password protected feature, the following "User ID" window will appear instead of the Password prompt:



Microsoft Windows look and feel



RealFlex4 look and feel

2 Realtime Monitoring and Control

The topics listed below discuss the monitoring and control capabilities and how to customize the windows used by Flex.View.

Alarm/Event Status Notification, see Section 2.1.

Control Summaries, see Section 2.2.

Dynamic Display Control, see Section 2.3.

Flex.View Summary Screens Data Summaries, see Section 2.4.

2.1 Alarm/Event Status Notification

Flex.View uses both audible and visible indicators to denote alarm status, changes of state and operator designated point information to display information pertinent to the system and your application. Alarm/Event Status Notifications can be grouped into the following types:

Display Indicators, see Section 2.1.1.

Audible Alarm Types, see Section 2.1.2.

2.1.1 Display Indicators

Flex.View display processes use several display conventions to alert the system operator to certain, non-standard data value conditions. These "display alert" conventions, used in all relevant Flex.View displays, are as follows:

Character	Color	Description
>	white	signifies control in progress. The control issued designator remains until either a control failed is received from the I/O driver, the controlled state is reported by the field device or the control time-out timer expires prior to reporting of the expected state.
I	white	signifies Instrument Failure (outside of set EU range for the point as defined in the Database Editor).
C	purple	signifies a Control Tag has been placed on the point This will prevent controls from being issued on the point until the Control Tag is removed.
I	yellow	signifies that an Information Tag has been assigned.
#	cyan	signifies that a Manual Overwrite has been assigned.
A	yellow	signifies that an Alarm Disabled command has been placed on the point. This will prevent the value from displaying an alarm state if one is reported from the field.
*	white	signifies a communications failure. This occurs when the remote unit does not reply to the scanner's request for information, the reply is found to be erroneous, or the remote unit has been removed from the data acquisition cycle.
	flashing	signifies an unacknowledged alarm state. All other colors are database defined.

Valid numerical data representations of non-alarmed points and/or analog values in "acceptable operating range" are colored green whereas valid, "normal state" status data is represented in the database record color designated for that state. All other colors are database defined for alarm violations.

2.1.2 Audible Alarm Types

Alarms/events within the Flex.View system represent predefined software messages that are either specified during the database configuration process or are automatically generated within the Flex.View software. The following types of alarms/events are supported:

Unauthorized Changes of State - Unauthorized changes of state occur when a status change is detected by the Flex.View software and a corresponding control request is not currently active for the point. An alarm or event will be generated according to the alarm type specified in the associated status database record.

Authorized, Controlled Changes of State - Authorized, controlled changes of state will result in the generation of an "authorized change" event upon detection of the expected status.

Controlled Change Failure (Time-out) - If the controlled point fails to report the expected state within a specified time interval, an alarm will be generated advising of the control timeout.

Transducer Over/Under Range or Alarm Limits Exceeded - Analog input values are initially compared to either the database specified raw or EU range according to the EU conversion type. If the EU conversion type is zero and the MIN/MAX EU values are both non-zero, or the EU conversion type is one, and the input is greater than MAX RAW or less than the MIN RAW, the point is alarmed as an "instrument failure" and the current value is forced to the violated MIN/MAX EU span value. Otherwise, analog points are checked against various limits that were specified during the database configuration process. These include:

LOLO	value below the defined low-low limit
LO	value below the defined low limit
HI	value above the defined high limit
HIHI	value above the defined high-high limit
ROC	value is changing too fast (exceeding ROC limit)

Tank database records similarly afford LOLO, LO, HI, and HIHI alarm limit violation checking based on feet/inches of product level.

Each status database point is designated as belonging, for purposes of alarm processing, to one of the following classes: ***no-alarm, event, alarm, urgent*** or ***critical***. Analog and tank alarms are automatically categorized as ***urgent*** for HI/LO violations, ***critical*** for HIHI/LOLO violations, and ***alarm*** for ROC and instrument failure occurrences. All classes of alarm processing generate printed logs to the system printer with the exception of ***no-alarm, Server unavailable, OK, ordinary, urgent*** and ***critical*** alarms trigger a unique sequence of audible beeps through the computer speaker as each alarm is logged. These audible alarms continue until silenced and/or acknowledged and can be recognized as to criticality of alarm by discerning the sequence of beeps, which are as follows:

Server unavailable	(short, very fast beeps) Can be enabled/disabled.
OK	(long, very slow beeps)
ordinary	(long, slow beeps)
urgent	(medium duration beeps)
critical	(short, fast beeps)

While in realtime display mode, flashing alarms can be quickly and easily acknowledged or the audible tone merely silenced without acknowledging alarms. Additionally, the operator can immediately display a summary of all unacknowledged alarms for the PCU that caused the most recent alarm.

Alarm processing can be traced via multi-page alarm summary displays and/or reports, as well as via the alarm lines on the alarm banner. These operational features allow quick reference to scan points that are currently in the active alarm state, provide constant recall of alarms and events that have occurred during recent operations, and afford the opportunity for corrective action.

2.2 Control Summaries

Flex.View provides a variety of methods to silence alarms, send controls and monitor system processes through the use of utilities and screens. Control summaries can be grouped into the following types:

System Summary, see Section 2.2.1.

Communications Summary, see Section 2.2.2.

Active Alarm window, see Section 2.2.3.

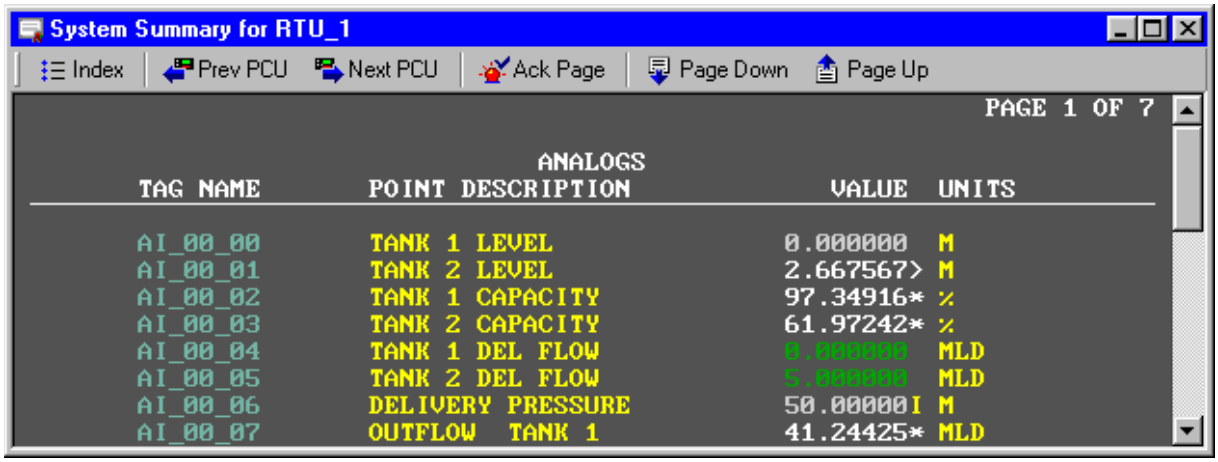
Flex.View displays:
Dynamic Display Types, see Section 2.2.6.
Trends, see Section 2.2.7.

2.2.1 System – PCU

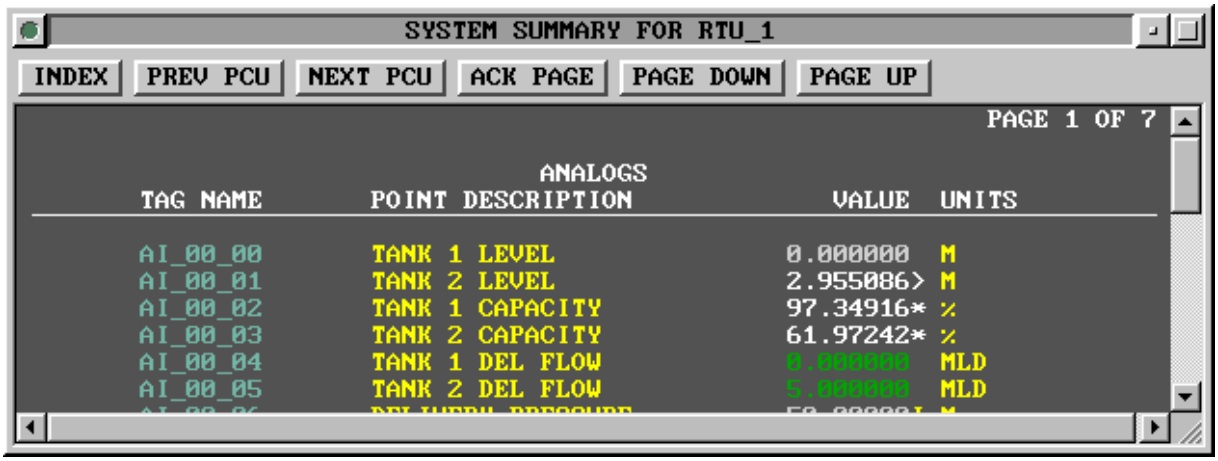
To view the dynamically updated state and/or value of all scan points associated with a unique PCU, issue controls or initiate processes, invoke the System - PCU display process by clicking on the **Main** menu button, selecting the **RealFlex Summaries** option and then selecting the **System - PCU** option.

Select the desired PCU from the resulting window menu, which will list by name, each PCU defined in the RealFlex system. You will note that PCU names are presented alphabetically. If the window is full, use the or buttons to find the PCU needed.

When you select a PCU, the first page of that PCU's System Summary display will be presented on the screen.



Microsoft Windows look and feel



RealFlex4 look and feel

In the System Summary display, database points are grouped by data type, (Analog, Status, Meter and Tank). Alarmed points, identified by a flashing state or value representation, can be acknowledged while viewing the System-PCU Summary screen (the **Ack Page** button).

When the System-PCU Summary for the selected PCU requires more than one page, on-screen **Page Up** and **Page Down** buttons provide circular scrolling through the pages. Also, on-screen buttons are provided for stepping through the various PCUs (the **Next PCU** and **Prev PCU** buttons) or switching directly to another PCU of interest (the **Index** button). In this fashion, all PCUs/points defined in the RealFlex system can be expediently monitored.

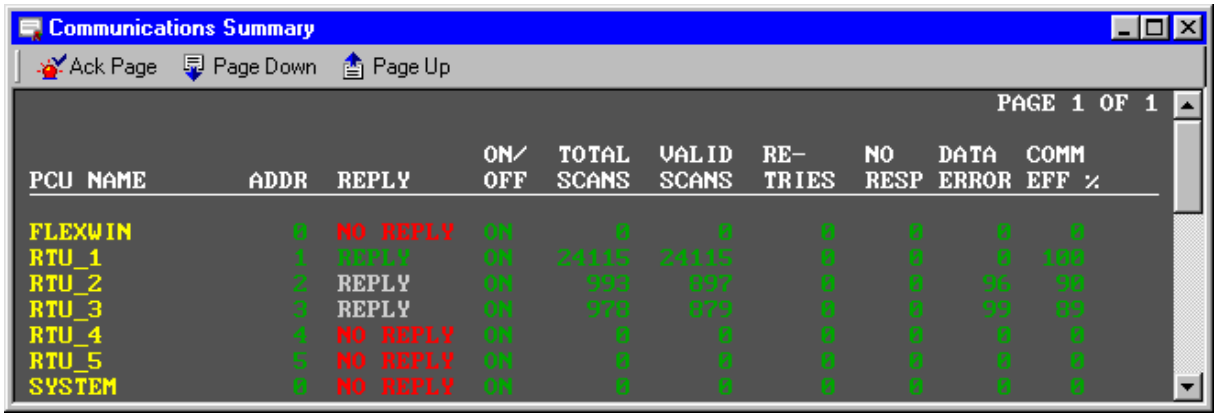
See also Section 2.3.1, “Dynamic Display Control - Poke Points”.

2.2.2 Communications

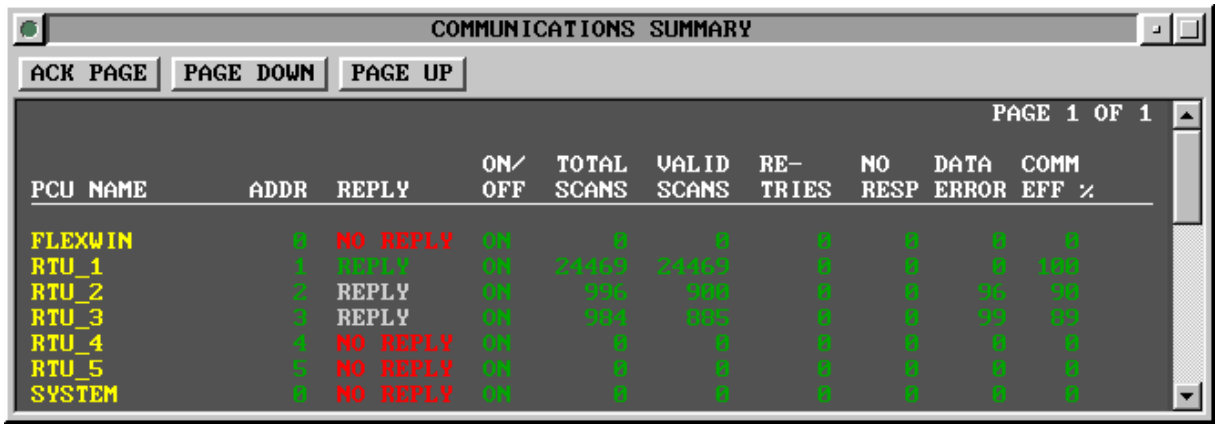
A facility for tracking the communications performance between the control software and the PLC/RTU hardware is provided via the Communications Summary display.

RealFlex records and displays statistics for each PLC/RTU defined in the system.

The Communications Summary display may be requested for viewing by clicking on the **Main** menu button, selecting **RealFlex Summaries** and then selecting **Communications** from the menu. The resulting multi-page display will list all PCUs defined in the system.


Communications Summary
Ack Page
Page Down
Page Up
PAGE 1 OF 1
PCU NAME ADDR REPLY ON/ OFF TOTAL SCANS VALID SCANS RE- TRIES NO RESP DATA ERROR COMM EFF %
FLEXWIN 0 NO REPLY ON 0 0 0 0 0 0
RTU_1 1 REPLY ON 24115 24115 0 0 0 100
RTU_2 2 REPLY ON 993 897 0 0 96 90
RTU_3 3 REPLY ON 978 879 0 0 99 89
RTU_4 4 NO REPLY ON 0 0 0 0 0 0
RTU_5 5 NO REPLY ON 0 0 0 0 0 0
SYSTEM 0 NO REPLY ON 0 0 0 0 0 0

Microsoft Windows look and feel


COMMUNICATIONS SUMMARY
ACK PAGE
PAGE DOWN
PAGE UP
PAGE 1 OF 1
PCU NAME ADDR REPLY ON/ OFF TOTAL SCANS VALID SCANS RE- TRIES NO RESP DATA ERROR COMM EFF %
FLEXWIN 0 NO REPLY ON 0 0 0 0 0 0
RTU_1 1 REPLY ON 24469 24469 0 0 0 100
RTU_2 2 REPLY ON 996 988 0 0 96 98
RTU_3 3 REPLY ON 984 885 0 0 99 89
RTU_4 4 NO REPLY ON 0 0 0 0 0 0
RTU_5 5 NO REPLY ON 0 0 0 0 0 0
SYSTEM 0 NO REPLY ON 0 0 0 0 0 0
RealFlex4 look and feel

Traverse through the allocated pages using the **PageUp** and **PageDown** keys, or the **Page Up** and **Page Down** on-screen buttons.

These statistics indicate the following:

TOTAL SCANS: - The total number of scan requests.

VALID SCANS: - The number of valid responses.

RETRIES: - The number of retries.

NO RESP: - The number of no-replies.

DATA ERROR: - The number of data errors.

COMM EFF %: - A communications efficiency calculated as a percentage based on the number of valid, error-free responses versus the total number of scan requests. 100% corresponds to perfect communication and 0% corresponds to no communication.

To change the scan status ON/OFF state for a PCU listed in the Communications Summary display, click on the **ON/OFF** entry to be changed, a pop-up menu will be displayed.

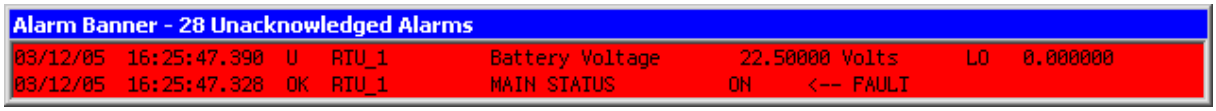
Select **Turn On** or **Turn Off** as desired to effect inclusion in or exclusion from the data acquisition cycle, or select **Demand Scan** to force all points associated with the PCU to be scanned immediately. (Additional options may be displayed and are I/O Driver specific. Please refer to applicable I/O Driver documentation for more information).

PCU NO-REPLY/REPLY alarm acknowledgement is supported from this summary display by pressing the space bar or **Ack Page** button.

2.2.3 Active Alarm Window

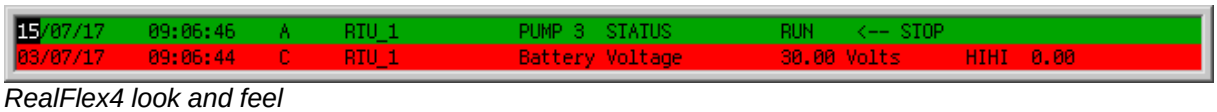
The Active Alarm window (banner) of the realtime display shows the most recently generated alarms. This allows the operator to monitor alarms as they occur, without having a specific graphic or summary display on the screen.

Note: The Active Alarm window may be configured to display between 2 and 10 lines of recently generated alarms. See Section 4.3.12.8, "Alarms" window from the "Configuration - Options" menu.


Alarm Banner - 28 Unacknowledged Alarms
03/12/05 16:25:47.390 U RTU_1 Battery Voltage 22.50000 Volts LO 0.000000
03/12/05 16:25:47.328 OK RTU_1 MAIN STATUS ON <-- FAULT

Microsoft Windows look and feel

The number of unacknowledged alarms appears in the title bar. As alarms are acknowledged, this number diminishes.



RealFlex4 look and feel

On the first line, the number of unacknowledged alarms appears superimposed over the date field. As alarms are acknowledged, this number diminishes until the day field is restored.

The individual alarms shown on these lines may vary in format depending upon the type of alarm being generated. The fields from left to right are:

Date - shown in the form YY/MM/DD.

Time - shown in the form HH:MM:SS:MS.

Alarm class - A = Alarm, U = Urgent, or C = Critical, or will contain OK for return-to-normal conditions.

PCU_Name and **Point_Description** - these fields help the operator identify the scan point for which the alarm is being logged.

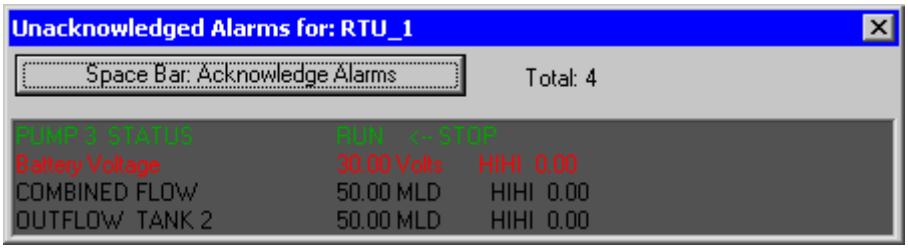
Value and **Units** - contains the actual EU (Engineering Units) value which resulted in the alarm message issuance.

Type - presents the alarm threshold value which was violated.

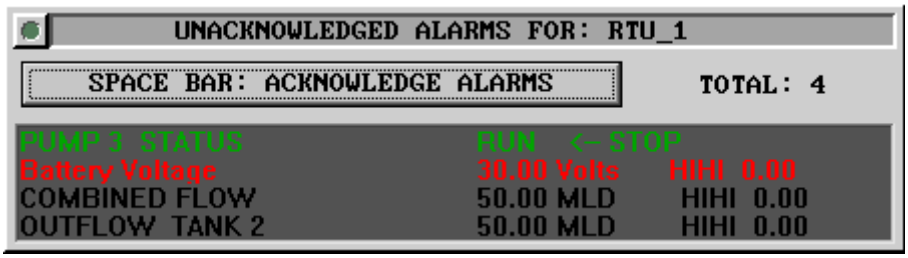
This same information will be printed on the system printer, as well as being added to the appropriate alarm summaries.

➔ **To view and acknowledge all unacknowledged alarms:**

1. Click on the alarm banner, a window similar to the one shown below will appear:


Unacknowledged Alarms for: RTU_1
Space Bar: Acknowledge Alarms
Total: 4
PUMP 3 STATUS RUN <- STOP
Battery Voltage 30.00 Volts HIHI 0.00
COMBINED FLOW 50.00 MLD HIHI 0.00
OUTFLOW TANK 2 50.00 MLD HIHI 0.00

Microsoft Windows look and feel



RealFlex4 look and feel

2. Click on the **Space Bar: Acknowledge Alarms** button, or press the **Spacebar** on your keyboard.

➔ **To view and acknowledge individual alarms:**

 Please refer to Section 2.2.3, "Active Alarms (RealFlex Summaries menu)".

2.2.4 Flex.View Displays

Displays are dynamic representations developed by the system implementor to depict the system's application parameters and/or station schematics.

As many of these displays may be built as are needed (limited only by hard disk space), and user-friendly techniques are provided for accessing the displays, and switching from one display to another.

While in realtime display mode, user-defined, graphic displays may be recalled for viewing by four mechanisms:

1. Via the Displays menu which is accessible through the Displays on-screen button.

2. Via the Virtual Screens window.

3. Via Display Links.

4. Via the Desktop Layouts window.

If you wish to send a particular display to the back of the workspace (to uncover other windows that may be behind it), click on the **To Back** on-screen button.

Note: Although you may have more than one display opened at a time, there is a maximum memory allocation set for Displays. When the maximum has been reached, you will see the message: "Not Enough Memory. Close one or more windows".

You can capture an image of the currently open Display by sending it directly to the Printer using the "Print Window" option from the "Utilities" menu or you can copy the display to the Clipboard. Once copied to the Clipboard, you can then paste the contents of the Clipboard into another application, (e.g., Microsoft Paint, Visio, Word etc.). Right-click on the open Display and select **Copy to Clipboard** from the pop-up menu.

2.2.5 Display links

If Display links have been implemented for your system, you will be able to switch to another display, or overlay the current display with another, by clicking on a link button in the display.

The system implementor specifies what the Display Link will look like. It will normally be a text string, but can be a single blank space or a special character, and may be placed on top of a particular symbol to make it easier to identify. Your system implementor should provide you with a means to identify the Display Links used in your system.

When you click on a Display Link, and the new format is displayed, the original format may or may not remain displayed.

The implementor may place as many Display Links on a single format as desired, and a given format may be accessed from as many other formats as desired, when Display Links are used. There are numerous ways the system implementor might use Display Links in the creation of an easy-to-use and easy-to-understand system.

2.2.6 Dynamic Display Types

Each graphic display is made up of a background picture overlaid with "dynamic display elements", "Display links" and "Superkeys". Each dynamic display element is a textual and/or graphical representation of the current status of a database point or a group of related database points. Each Superkey is an on-screen button that is used to start a user defined procedure.

The various types of dynamic display elements are described as follows:

2.2.6.1 Analog Points

VALUE - The purpose of this display type, is to reflect the current state of the datapoint in a way that is more effective than displaying only the name of the state in the database. For instance, if there are twenty valves in a system, all with the possible states OPEN and CLOSED, the implementor could use VALUE displays to reflect "V-1 OPEN"/"V-1 CLOSED", "V-2 OPEN"/V-2 CLOSED", etc. With VALUE displays, the entire text string changes color with the state of the datapoint, and flashes when an alarm occurs. A subtype of Value dynamics provide the display of the units as defined in the Database Editor. In operation, the units will appear in the color appropriate to the current value of the datapoint in question. This display type can be used to label another display of the same datapoint (for example a VALUE or BAR dynamic) or it can be used by itself to serve as an alarm indicator.

TEXT - Analog text dynamic displays place on the screen a different text string for each of up to 10 values the datapoint assumes, and each string may be displayed in a different color.

VAR TEXT - The Var Text display type is similar to the Text display type described above, but is used where more than ten messages are needed, or where longer messages are needed. As with the Text display type, the value of the associated analog datapoint is used to determine which message (if any) will be displayed.

BAR - A bar type dynamic display element consists of a bar graph representing an analog database point's current value. The graph may be scaled or unscaled, as the implementor desires. The color of an analog bar can be set to reflect the database point's current alarm state. If a specific color was chosen during Display implementation, the graph will always display in the selected color.

DESCRIPTION - This mask will display an extended description that can better describe a display.

2.2.6.2 Meter Points

VALUE - For meter database dynamics, the value field is used to display the current net value of the selected point, the units, associated hourly, daily, monthly, yearly accumulations, factor, last hour, yesterday, gross value and raw value.

TIME - This type of meter dynamic display element is used to display calculated unit run times which are accumulated by the calculation processor. For example, a time display might be used to monitor how long a pump has been turned on, so that preventive maintenance can be performed after a factory-specified period of operation.

BAR - A bar type dynamic display element consists of a bar graph representing an meter database point's current value. The graph may be scaled or unscaled, as the implementor desires. If no color is specified for the bar graph, the graph will display in the defined alarm colors. If a color is selected for the graph during display implementation, the graph will always display in the selected color.

DESCRIPTION - This mask will display an extended description that can better describe a display.

2.2.6.3 Status Points

SYMBOL - Symbol type dynamic display elements are used for status or digital input/output points such as valves, pumps, blowers, circuit breakers, etc. A display of this type consists of a graphical symbol whose color reflects the current state of the database point. If an unacknowledged alarm condition exists for the database point, the symbol will flash.

VALUE - Value type dynamic display elements are used to show the name of the state a database point is in if the database point reflects a digital device. The color of the display will reflect the current state and will flash if an unacknowledged alarm state exists for the point.

OBJECT - An Object dynamic display element is a graphical object in the display that changes colors according to the state of an associated status datapoint. It can be as simple as a small circle, or as complex as a large, irregular polygon. It will generally represent some important piece of equipment in the system, such as a boiler, tank, or pipeline.

ANIMATION - Animation displays are similar to symbol displays, except that a different symbol may be used for each digital state. For example, the standard engineering drawing symbol for an open valve would be used to represent the open state, and the standard symbol for a closed valve would be used to represent the closed state. The valve symbol would appear to be moving when the monitored valve's state changed. As with the symbol type, the color of the animation display will reflect the current state of the database point, and the display will flash if an unacknowledged alarm state exists for the database point.

WINDOW - The Window dynamic display element is used to transform a portion of the existing format into a dynamic element in which the color is updated with the database colors for changes in state.

DESCRIPTION - This mask will display an extended description that can better describe a display.

2.2.6.4 Tank Points

A scanned tank "data point" is actually a set of data generated by special tank monitoring hardware and software that is not present in most systems.

The various subtypes of tank display elements, are described as follows:

TANK SYMBOL - Selection of the TANK SYMBOL display subtype will allow definition of an open boxed area within which the current level of the tank will be displayed visually as a vertical bar graph or chart. If a color has been assigned to a tank tag name via the Product Editor, the status value will display in the defined color when in normal range. If there is no association made via the Product Editor, the status value will display in black. When alarm limits are reached, the status will reflect the type of alarm and the associated color as defined in the Database Editor.

TEMPERATURE - This mask will display the temperature of the reference tank. In order for the values to display, L&J Tank Gauging interface equipment must be used. This value will always display in green.

LEVEL - Selection of the LEVEL display subtype will display "FT" representing feet-inches-fractions of inches. If a color has been assigned to a tank tag name via the Product Editor, the status value will display in the defined color when in normal range. If there is no association made via the Product Editor, the status value will display in black. When alarm limits are reached, the status will reflect the type of alarm and the associated color as defined in the Database Editor.

PRODUCT VOLUME - This mask will display the product volume of the referenced tank. If L&J Tank Gauging interface equipment is used, this value will be pulled from the field device. If a tank strapping table has been defined for any other tank database type, the value will be extrapolated from the tank strapping table values. If a color has been assigned to a tank tag name via the Product Editor, the status value will display in the defined color when in normal range. If there is no association made via the Product Editor, the status value will display in black. When alarm limits are reached, the status will reflect the type of alarm and the associated color as defined in the Database Editor.

GRAVITY - This mask will display the gravity as registered by L&J Tank Gauging interface equipment. This value will always display in green.

FLOWRATE - This mask will display the flowrate as registered by L&J Tank Gauging interface equipment. This value will always display in green.

AVAILABLE STORAGE - This mask will display the available storage in the referenced tank. If L&J Tank Gauging interface, this value will be pulled from the field device. If a tank strapping table has been defined for any other tank database type, the value will be extrapolated from the tank strapping table values. If a color has been assigned to a tank tag name via the Product Editor, the status value will display in the defined color when in normal range. If there is no association made via the Product Editor, the status value will display in black. When alarm limits are reached, the status will reflect the type of alarm and the associated color as defined in the Database Editor.

PRODUCT NAME - This mask will be translated at display time to live data, indicating the identification of the product within the tank. If the Level Conversion type for the selected point indicates L&J Tank Gauging interface, this information will be pulled from the field via product code, defined using the Product Editor and will display in the color defined therein. If L&J Tank Gauging interface is not being used, this information may be user defined through the Product Editor selection from the Configuration. If no designation has been made, the field will be blank.

TANK TAG NAME - This mask will be translated at display time to indicate the tank number if L & J Tank Gauging interface is used. If the field device does not support reporting of tank number values, the tank tag name will be displayed. If a color has been assigned to a tank tag name via the Product Editor, the status value will display in the defined color when in normal range. If there is no association made via the Product Editor, the status value will display in black. When alarm limits are reached, the status will reflect the type of alarm and the associated color as defined in the Database Editor.

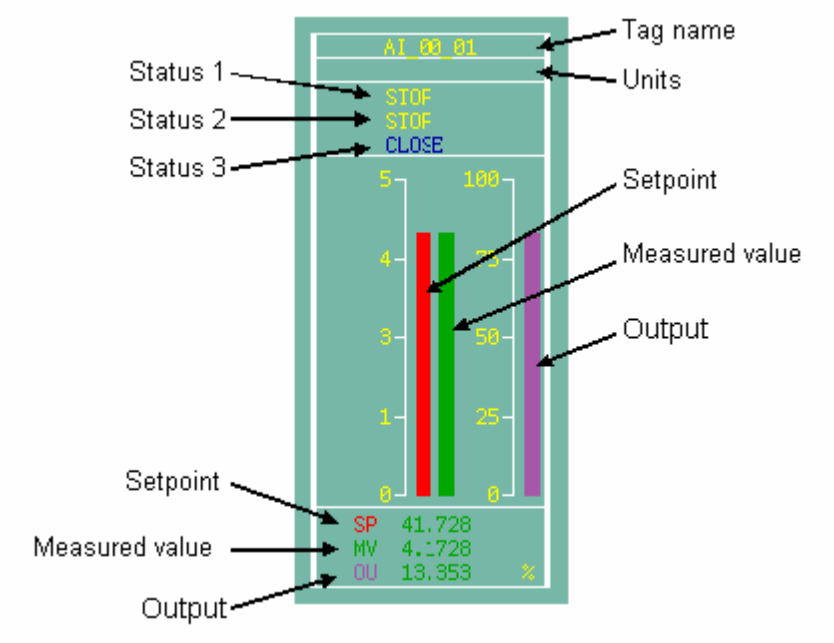
ALARM STATUS - This mask will be translated at display time to live data, indicating the tank's alarm state. If a color has been assigned to a tank tag name via the Product Editor, the status value will display in the defined color when in normal range. If there is no association made via the Product Editor, the status value will display in black. When alarm limits are reached, the status will reflect the type of alarm and the associated color as defined in the Database Editor.

2.2.6.5 Trends

A trend display is a dynamically updated graph depicting a database point's numerical value plotted against time. For further details, please refer to Section 2.2.7, “Trend Dynamic Data”.

2.2.6.6 PID

The PID dynamic display type is a graphically simulated PID (Proportional Integral Derivative) loop controller faceplate. An example is shown below.



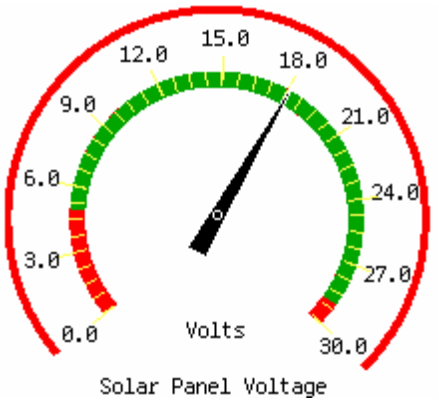
In general, a PID faceplate is used to monitor a controlled process, and the elements of the subsystem controlling it. For example, the temperature of a boiler might be controlled by a thermostat, which regulates the flow of fuel to the burners. The PID display element affords operator control of the setpoint (SP) and output (OU) values as well as the mode of operation of the actual controller (local/remote, manual/auto, panel/workstation).

2.2.6.7 Free Text

Free text is a way of placing text on a display while in the Dynamic Builder. Free text is not a dynamic and does not represent any defined database point.

2.2.6.8 Gauge

The Gauge Dynamic object represents a Analog, Meter or Tank tag state in the form of a Gauge. An example is shown below:



The purpose of this dynamic display type is to reflect the current value of the datapoint indicated by the position of a pointer on a gauge. The gauge may be scaled or unscaled, as the implementor desires. Limit sectors may also be displayed as a bar around the scale. The bar is divided into colored segments that reflect the colors defined in the Database Editor.

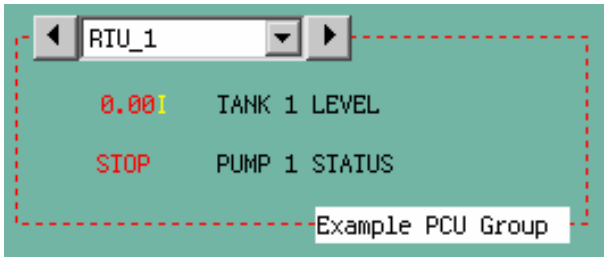
2.2.6.9 Web page

The Web Page Dynamic object links you to a predefined WEB page.

2.2.6.10 PCU Group

The PCU Group display type allows you to monitor and control a number of identical data points which are common for a number of PCUs.

In the example below, we have part of a Display where four elements have been encompassed by the "PCU Group" object:

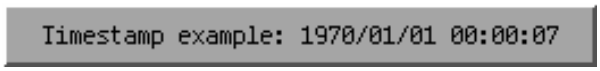


The components for the "PCU Group" object comprises of a field displaying the PCU name and a drop-down button. Other components that may or may not be displayed are Previous and Next buttons, a Description for the element grouping and a Boarder around the group of elements.

The operator only needs to use the drop-down list or Previous and Next buttons to select and view required PCU details.

2.2.6.11 Timestamp

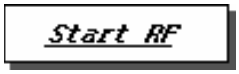
The Timestamp dynamic object displays the timestamp of the last event for a Analog, Meter, Status or Tank tag point. An example is shown below:



The system implementor specifies what time information is displayed. It will normally display the date and time for the event, but can also include other information to make it easier to identify. Your system implementor should provide you with a means to identify the Timestamp object used in your system.

2.2.6.12 User Functions

The "User Functions" dynamic object allows for the execution of a procedure on the RealFlex QNX server. An example of the display representation is shown below.



The system implementor specifies what information is displayed. It will normally display the name of the function, but can also include other information to make it easier to identify. Your system implementor should provide you with a means to identify the User Function object used in your system.

Within Flex.View, the operator can run the assigned user function by clicking on the "User Function" button. This method for starting a User Function can be used as an alternative to creating a User Function menu item from within Flex.View.

User Functions available are:

Start RF - RealFlex creates a command that will start RealFlex from Flex.View.

Stop RF - RealFlex creates a command that will stop RealFlex from Flex.View.

Restart RF - RealFlex creates a command that will restart RealFlex from Flex.View.

RF DB init - RealFlex initializes the database on the local machine.

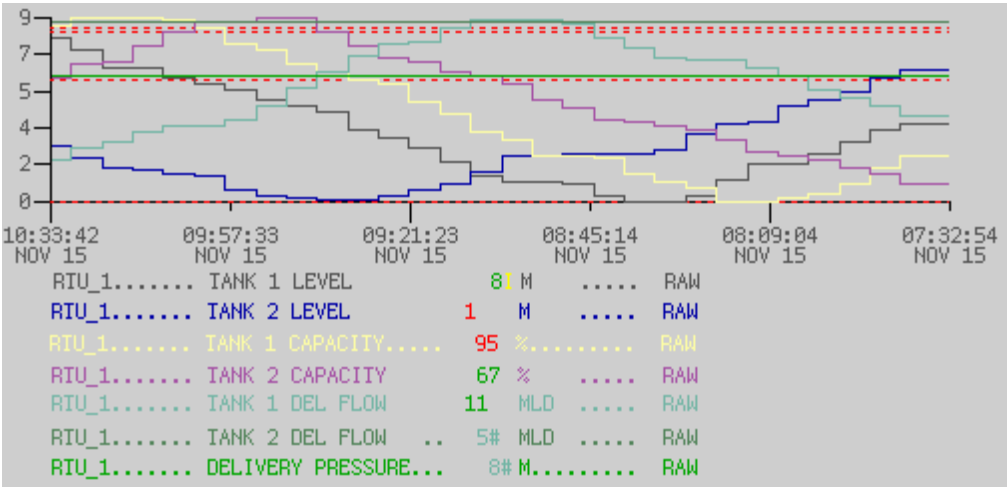
AutoUpdate - RealFlex runs the script file "AutoUpdate" from the RealFlex/QNX system which updates Flex.View with any changes made to the database on the RealFlex/QNX system side since the last AutoUpdate was run.

Crontab init - A file on RealFlex QNX PC that stores scheduled tasks. Crontab Init reads this text file and implements the schedules found inside this file.

2.2.7 Trend Dynamic Data

A trend display is a dynamically updated graph showing a database point's numerical value plotted against time.

Below is a sample trend display:


9
7
5
4
2
0
10:33:42 NOV 15
09:57:33 NOV 15
09:21:23 NOV 15
08:45:14 NOV 15
08:09:04 NOV 15
07:32:54 NOV 15
RIU_1..... TANK 1 LEVEL 81 M ..... RAW
RIU_1..... TANK 2 LEVEL 1 M ..... RAW
RIU_1..... TANK 1 CAPACITY..... 95 %..... RAW
RIU_1..... TANK 2 CAPACITY 67 % ..... RAW
RIU_1..... TANK 1 DEL FLOW 11 MLD ..... RAW
RIU_1..... TANK 2 DEL FLOW .. 5# MLD ..... RAW
RIU_1..... DELIVERY PRESSURE... 8# M..... RAW

In some cases, the values of several different datapoints may be plotted, each in a different color, on the same graph. In these cases, there may be a description line for each datapoint located directly beneath the display, and a different set of scale labels will be displayable for each, with the color of each set of scale labels being the same as the color of the corresponding plot.

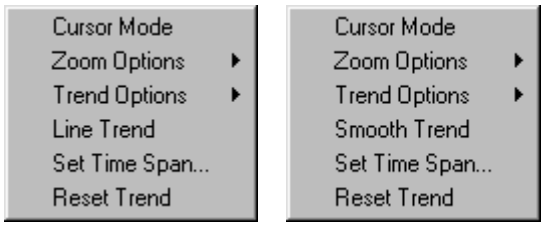
Note that the time axis of the graph is "reversed", with the current system clock time at the left, and progressively earlier times as you move to the right. If you take a few minutes and watch a trend display, you will see the entire plotted trace move to the right, with points being added to its left end. The length of the period on the graph and the time direction you want the trend to update in is determined when a trend display is first created, using one of the Display builders.

When a trend display first appears, it may be blank. This happens if historical data collection is not in effect for the database points being plotted. As additional data comes in, it will be added to the graph, until eventually the trace will cover the entire time span.

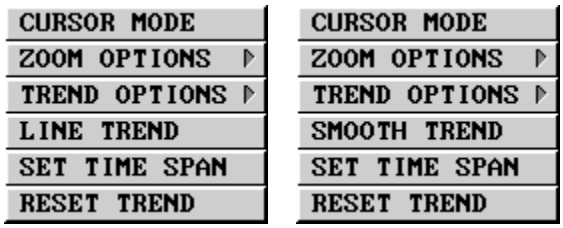
Trends displayed in realtime will not save plotted information once the display is closed and reopened.

2.2.7.1 Trend Display Modes

When you right click within the axes of a trend, one of the following menus will appear:



Microsoft Windows look and feel

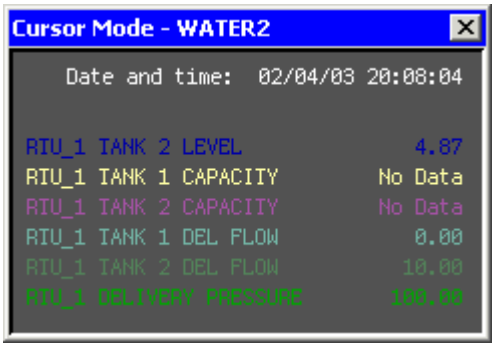


RealFlex4 look and feel

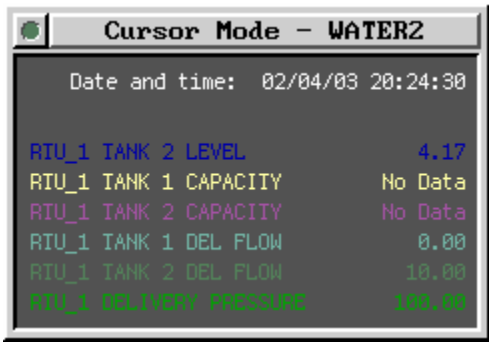
These menus offer the following options:

Cursor Mode:

Selecting the **Cursor Mode** option will bring up a window displaying data similar to that shown below.


Cursor Mode - WATER2
Date and time: 02/04/03 20:08:04
RIU_1 TANK 2 LEVEL 4.87
RIU_1 TANK 1 CAPACITY No Data
RIU_1 TANK 2 CAPACITY No Data
RIU_1 TANK 1 DEL FLOW 0.00
RIU_1 TANK 2 DEL FLOW 10.00
RIU_1 DELIVERY PRESSURE 100.00

Microsoft Windows look and feel


Cursor Mode - WATER2
Date and time: 02/04/03 20:24:30
RIU_1 TANK 2 LEVEL 4.17
RIU_1 TANK 1 CAPACITY No Data
RIU_1 TANK 2 CAPACITY No Data
RIU_1 TANK 1 DEL FLOW 0.00
RIU_1 TANK 2 DEL FLOW 10.00
RIU_1 DELIVERY PRESSURE 100.00

RealFlex4 look and feel

A triangular symbol with a vertical dotted line will appear over the trend. Click on this symbol and using the mouse, move left or right through the trend display.

The first line of the Cursor Mode window shows the date and time. The following fields show the tag name and its value of the sample. The time and values will update as you move through the trend display with the mouse.

During cursor mode you can issue controls or view other graphic displays if desired.

Zoom Options:

The **Zoom Options** menu selection allows you to affect an expanded view of a single segment of a trend graph (i.e., to "zoom in"), use the mouse to specify the time interval to be included in the exploded view.

To do this, first choose one of the three options **Zoom Time**, **Zoom Scale**, or **Zoom Both**. The **Zoom Time** option is the default mode, and implies that only the time length of the trend is relevant. Alternatively, the **Zoom Scale** option implies that the scale portion of the trend is most relevant, and **Zoom Both** takes both the time and scale into account.

In order to zoom in on a selected area, press and hold-down the **Ctrl** key, the pointer will change to a magnifying glass. Place the pointer within the plotting area at the top-left edge of the portion of the display you want included in the expanded graph. Then press and hold down the select button and move the mouse to the bottom-right corner. A box will form as you do this. When the right edge of the box is at the right edge of the display portion to be expanded, release the button.

If the **Zoom Time** option is selected then the length of the box along the time axis is significant in the trend calculation. If the option **Zoom Scale** is selected then the height of the box along the scale axis is significant. **Zoom Both** utilizes both the height and length of the rectangular area in its calculation of the trend.

Upon selection of a zoom option and zoom area, a new time span will be calculated and the trend will be adjusted to reflect the data recorded during the interval identified. The numerical value(s) on the description line under the graph is the current value of the data point being trended.

Note: Trend display zooming is not possible for database points where historical data collection is not in place. If historical data collection is in place for one or more of the data points in the graph, zooming will be possible when the scale label for one of these traces is displayed. When zooming is invoked, the trace is lost for all points in the trend for which historical data collection is not in place.

Because each plotted point in a non-zoomed trend may be an average of several points taken during a subinterval, zooming in on a smaller area may increase the precision of the plot. It is possible to zoom in several times, expanding the time scale (or reducing the time) until the best possible precision of one sample per second is obtained. It is also possible to use panning with the scale expanded.

To zoom back out to full scale, select the **Undo Zoom** option from the Trend Mode Menu.

Note: Trends which are defined to utilize automatic scaling for all defined points cannot be zoomed.

Trend Options:

Depending upon the operator's preference, you can tailor the way the trend lines appear. You can either display lines as a dotted or normal line, and you can hide or display the trend limit lines.

Line Trend / Smooth Trend:

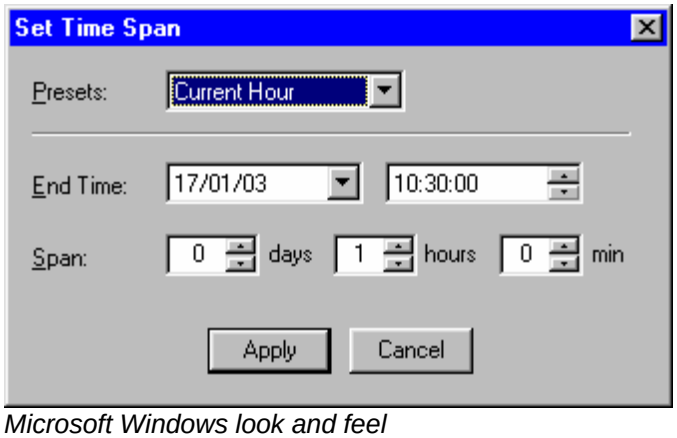
The Trend Menu selection will display the style not currently selected. In other words, if a Line trend is currently displayed, the Trend Menu will show the "Smooth Trend" option, if Smooth trend is currently displayed, the menu will show the "Line Trend" option. The trend display style can be changed at any time. When the user chooses to change the display style, the trend is automatically reset.

Line Trend - When a trend is accessed from the Display menu, it is automatically displayed as a Line Trend. This means that the last value received from the field is carried forward as a horizontal line until a new value is received. For example, if the previous value for a point was 27.00 and no new values were received from the field for 5 minutes, the trend would display a straight line at 27.00 until the next new value is received. If the next value for this point was 33.00, the trend would display 27.00 for a 5 minute span and then draw a vertical line up to 33.00.

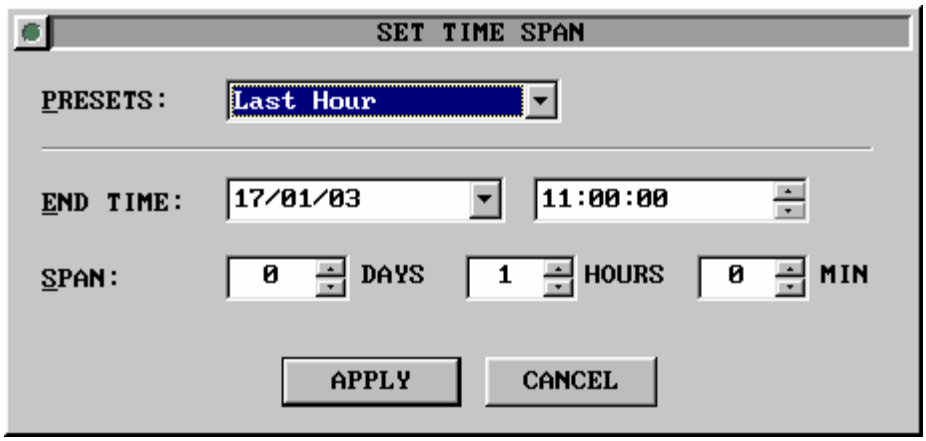
Smooth Trend - A smooth trend simply displays the same trend in a different way, much as a chart recorder would show changes in value. For example, if the previous value is 27.00 and the next new value is 33.00, a diagonal line would be drawn between the two points.

Set Time Span:

The **Set Time Span** option opens a time span window which allows the user to set both the start time and time span of the trend data.



Microsoft Windows look and feel



RealFlex4 look and feel

These values can be set by moving through the appropriate field with either the mouse or the **Tab** key and then changing the numbers by clicking on the spinner buttons, using the **Up** and **Down** keys on the keypad, or by entering the new number manually.

The **Presets** field button will open a list of user definable time spans; Current Hour, Last Hour, Yesterday, Last Month and Year already set up. By selecting an item from this list the user can change quickly between time spans without having to enter items by hand.

Reset Trend:

To return to the latest time interval, right-click within the trend axes and select **Reset Trend** from the Trend Mode menu that appears.

2.2.7.2 Other Trend handling functions available

Trend Display Panning:

To pan backward to examine a previous time span period, place the cursor on the rightmost time label and click the select button. Repeating this procedure will pan backward through the historical data until the point's life-cycle start time is reached.

To pan forward, place the cursor on the leftmost time label and click the select button. (Panning is disabled if historical data collection is not enabled for the database point(s) being graphed, and when panning is invoked, the trace is lost for all points in the trend for which historical data collection is not in place).

Trend Point Description Options:

The Point Description is the information displayed below the trend area detailing the PCU Name, Point Description, Point Value, Units and Point Value Displayed (RAW, MAX, MIN or AVG). Using the Point Description line, the operator can choose to view all points defined for the trend, a subset of points or an average, minimum, maximum or raw values for analog points.

➔ **To View a Subset of Trended Values:**

- To change the display values for a selected point, right click on the far right column which displays the current definition of the point, i.e., RAW, MIN, MAX or AVG.

  As you click, the point display type will change from the defined display type to display "Pen OFF" and the point in the trend display will "disappear". You may "turn off" all points or only selected points. To turn a point back on, right-click on the point display type again and the display type will return and the point will reappear in the trend display area.

  By default, when a trend is opened, all points are displayed.

➔ **To Change the Point Value Display:**

- To change the Point Value display in the trend area and in the Point Description line, left-click on the far right column which displays the current display definition of the analog point, i.e., RAW, MIN, MAX or AVG. The values will cycle through RAW, MIN, MAX or AVG and the selected point in the associated Trend display will also change to reflect the type of data requested. This feature is only available for analog values.

  When the display type is changed, the trend is automatically reset. These changes are only in effect while the trend is being viewed. Once the trend is closed and reopened, the display will reflect the initial trend definition information.

2.3 Dynamic Display Control

Dynamic display controls can be grouped into the following types:

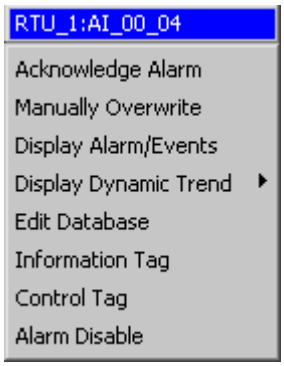
Poke Points, see Section 2.3.1.

Realtime Controls, see Section 2.3.2.

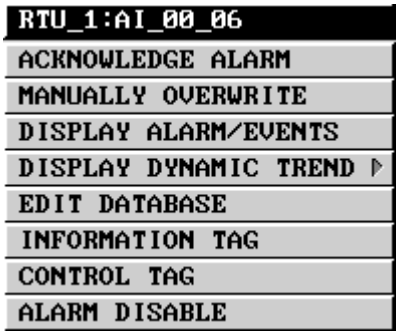
2.3.1 Dynamic Display Control - Poke Points

The term "Poke Point" refers to a group of functions that can be quickly and easily invoked by pointing and clicking with the mouse or trackball. Poke point functions include expanded displays (such as bar graphs, dials and trend charts), manual data correction, tagging, alarm related activities and user-supplied procedures.

To use a poke point while viewing a graphic or summary display, place the cursor on a dynamically updated element of the display and click the menu (right) button on the mouse. If the selected object is a poke point (not all are), the Poke Points menu similar to the one shown below will appear.



Microsoft Windows look and feel



RealFlex4 look and feel

Select the function required from the menu. If the selected function is not applicable to the datapoint associated with the display element you have chosen, nothing will happen. Otherwise, the selected function will immediately be performed.

All of the Poke Points menu functions are invoked by clicking on a Poke Point, and apply to the database point associated with the Poke Point (as opposed to merely the particular display).

2.3.1.1 Acknowledge Alarm

This function silences the audible alarm and stops the flashing of the display element selected. This is the only way to acknowledge a single alarm without simultaneously acknowledging all other active alarms in the same display.

2.3.1.2 Manually Overwrite

Note: Access to this option may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

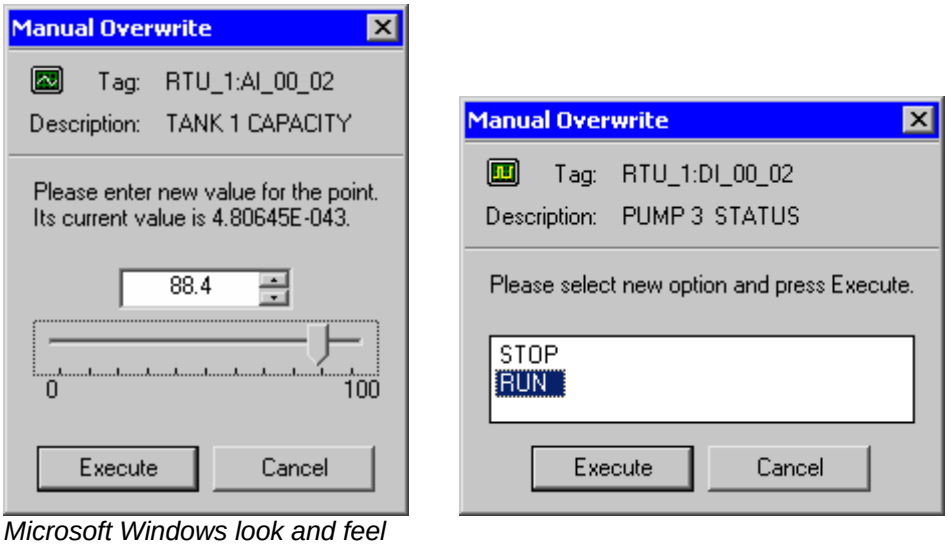
This function is used to manually correct the value or state of the database point associated with the poke point when the correct value or state is known to be different from that reported by the scanner and shown on the display. When a value or state is manually overwritten, the supplied value remains in place until cancelled or manually overwritten with a new value.

While viewing either a System-PCU Summary display page or a custom graphic display with dynamic status, analog, meter and/or tank points defined, the Manual Overwrite feature is invoked by performing the following:

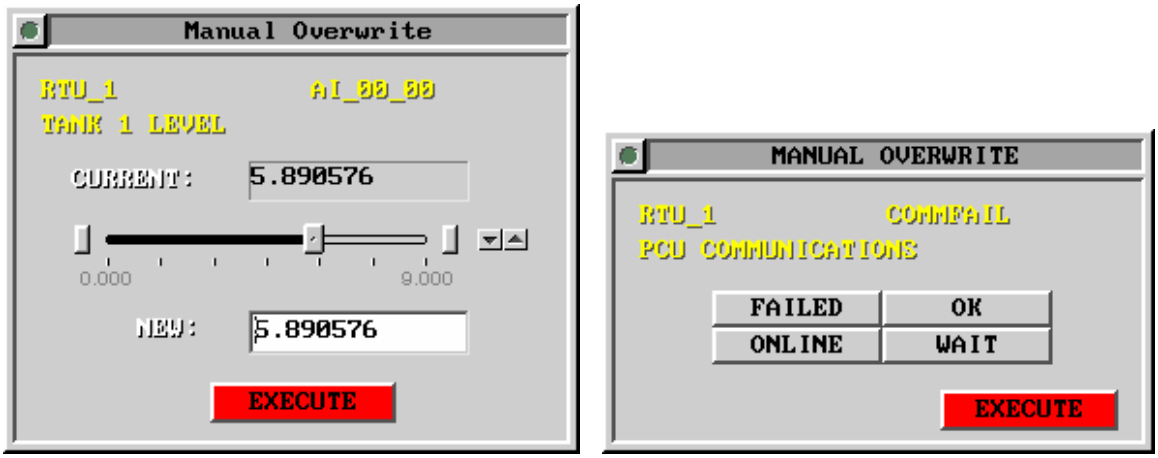
1. Click (with the right mouse button) on the point you wish to overwrite. The Poke Points menu will appear.

2. Select **Manually Overwrite** from the Poke Points menu. The "Manual Overwrite" window will appear.

   Note: For a Meter or Tank point, a window will first appear allowing you to select the Subtype you wish to overwrite. Example "Manual Overwrite" windows:



Microsoft Windows look and feel



RealFlex4 look and feel

3. Use the pop-up window to perform the overwrite.

While manual overwrite is in effect, applicable numeric value and digital state representations will be displayed in the color CYAN with a # sign appended. Digital symbol/window dynamics, as well as analog/meter bar and tank symbol representations, will merely reflect the CYAN coloration. In all instances of points that have been manually overwritten, updates reflecting field conditions will be suppressed. Upon subsequent selection of a currently overwritten point, the operator will be prompted for either a change of the current overwrite state/value or for removal of the manual overwrite mode. If removal is chosen, the # sign and cyan coloration will be removed and dynamic data point updates will once again reflect field conditions.

Note: Manual overwrite for any field concerning meters other than CURRENT NET or CURRENT GROSS will not appear to have the same characteristics as other database points. The field's value will momentarily reflect the overwritten value and then, if applicable, begin to count changes as new delta counts are scanned.

Manual Overwrites of Tank Product Data

Manual Overwrites can be performed on Tank Dynamic data in a System-PCU Summary to provide Product Information as defined in the Product Editor or via L&J Tank Gauging Interface. A product must be defined in the Product Editor or received directly from the field device to enable proper use of the Product_ID manual overwrite.

To define a product for a tank database point, right click on the desired tank point in the System-PCU Summary and select "PRODUCT_ID" from the pop-up window. A menu will appear displaying all applicable defined product data. Select the proper product information and click on **Update Changes** to apply the information. Once chosen, the tank dynamic data will appear in the selected color as defined in the Product Editor.

2.3.1.3 Display Alarm/Events

The Display Alarm/Events selection will display all alarms and events for the selected point as recorded in the Historical Alarm/Event Summary. This window has no controls associated with it and is a capture of data at the time it was accessed.

2.3.1.4 Display Dynamic Trend *(Analog and Status points only)*

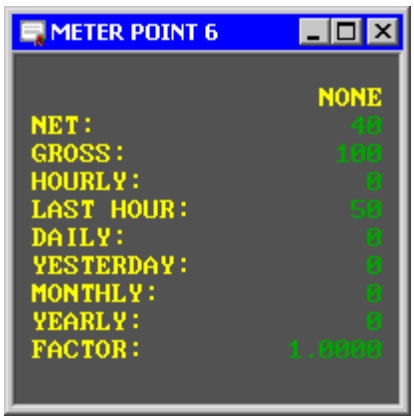
Used to display a dynamically updated graph showing the database point's numerical value plotted against time. When you select this option a sub-menu appears giving you the choice of opening the trend in a new window, or if you already have other trend windows open, you can open the new trend within any existing window.

See Section 2.2.7, "Trend Dynamic Data" for a description of the trend display nodes and point descriptions.

The Point description line can be hidden by clicking on the ☒ button to the left of the line.

2.3.1.5 Display Poke *(Meter points only)*

The Display Poke selection will display the values of meter point sub fields as shown below.



Microsoft Windows look and feel

RealFlex4 look and feel

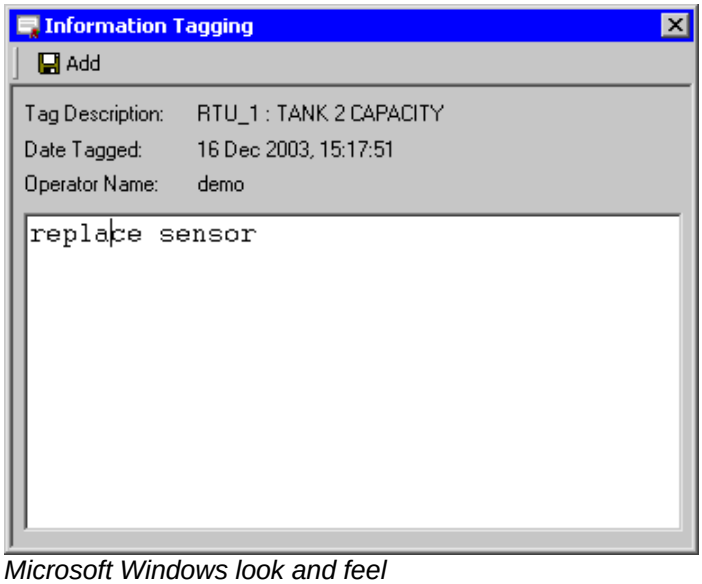
2.3.1.6 Edit Database

Providing a user has the appropriate user-level access, the Edit Database option will allow the user to access and edit certain fields available in the Database Editor. Fields that cannot be edited are grayed out.

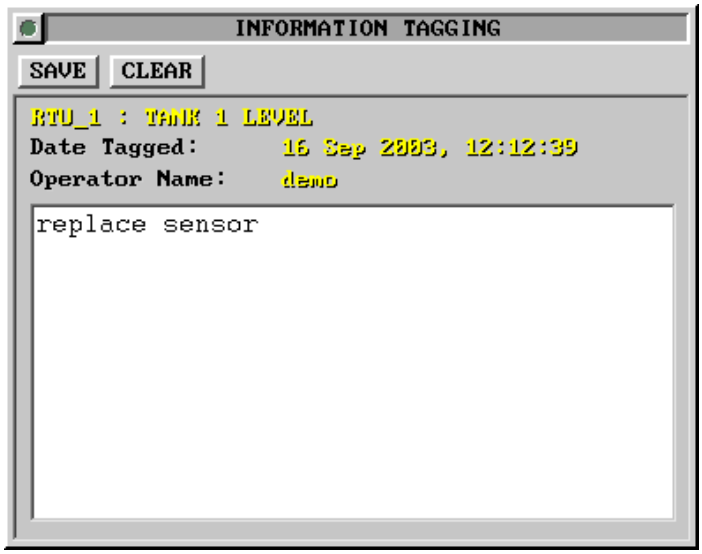
For description of fields in the Edit Database window, please refer to Section 3.3.

2.3.1.7 Information Tagging

The Information Tagging provides the system operator a method to attach information associated with a particular point. When Information Tag is selected from the Poke Point Menu, the following window will appear:



Microsoft Windows look and feel



RealFlex4 look and feel

The Information tagging window will display the PCU name, tag name, the date accessed and the operator login.

To enter information and apply tagging, begin typing. When the message is complete, click on the **Add** button.

To edit information and reapply tagging, edit existing information. When the message is complete, click on the **Save** button.

To clear the message notification, click on the **Clear** button. You will be prompted to confirm the clearing of the tag with a "Yes/No" selection.

To abort changes and close the window, click on the or button in the title bar of the window.

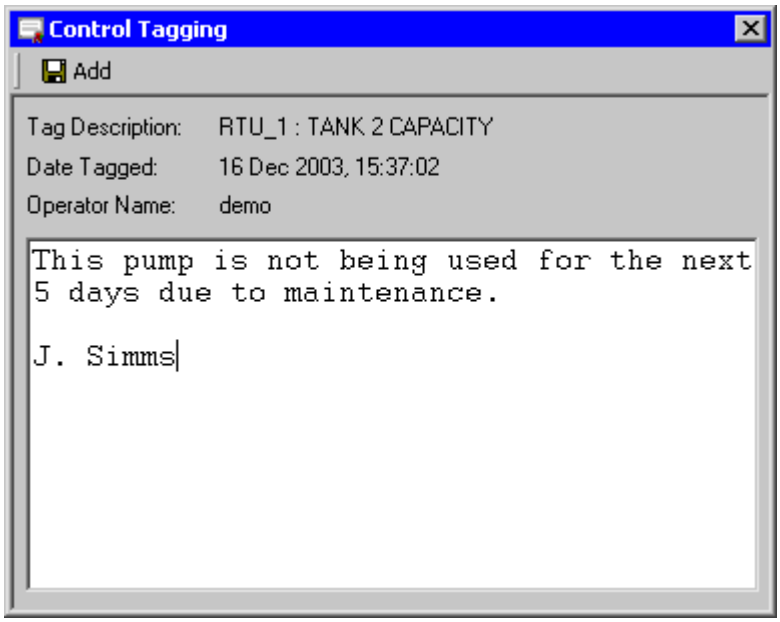
Once an information tag has been placed, the value of the associated point will display with a yellow "I". Whenever an operator tries to access an information tagged point to send a control, the information placed in the Information Tag window will display prior to the control window to notify the operator of any information associated with the selected point.

Once an information tag is placed, it can be cleared or edited by any user. The information tag window will always display the last user logon who edited the text. Each time an operator sets or clears an information tag, an entry is placed in the Historical Alarm/Event Summary.

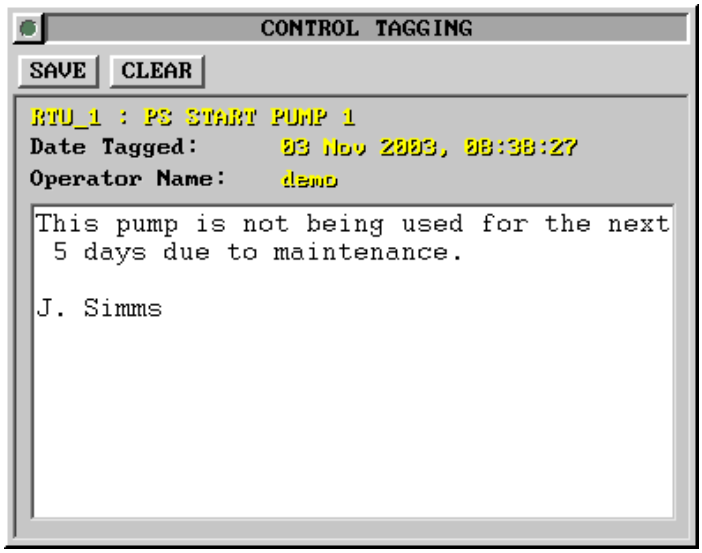
2.3.1.8 Control Tagging *(Analog and Meter points only)*

Note: Access to this option may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

A control tag is used to prevent controls on points. Once the Control Tag option is selected from the Poke Points menu, the following window is displayed:



Microsoft Windows look and feel



RealFlex4 look and feel

The control tagging window will display the PCU name, tag name, the date accessed and the operator login.

To enter information and apply tagging, begin typing. When the message is complete, click on the **Add** button.

To edit information and reapply tagging, edit existing information. When the message is complete, click on the **Save** button.

To clear the message notification, click on the **Clear** button. You will be prompted to confirm the clearing of the tag with a "Yes/No" selection.

To abort changes and close the window, click on the or button in the title bar of the window.

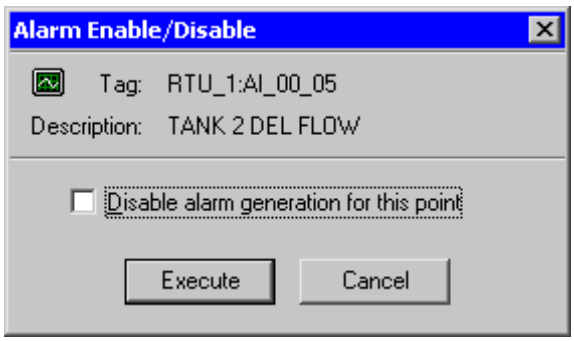
Once a control tag has been placed, the value of the associated point will display with a purple "C". Whenever an operator tries to access a control tagged point to send a control, the information placed in the Control Tag window will display. No controls can be issued on a control tagged point until the control tag is removed.

Once a control tag is placed, it can be cleared or edited by any user. The control tag window will always display the last user logon who edited the text. Each time an operator sets or clears an information tag, an entry is placed in the Historical Alarm/Event Summary.

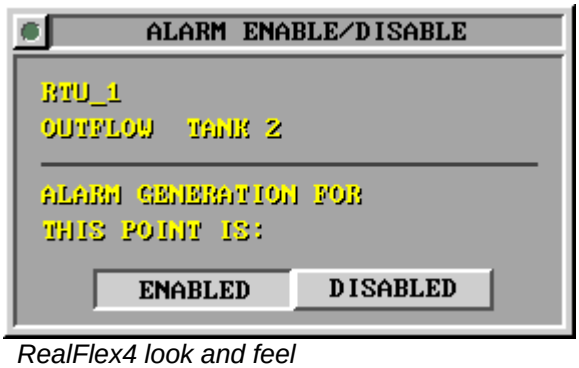
2.3.1.9 Alarm Enable/Disable

Note: Access to this option may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

The Alarm Disable option, available from the Poke Point menu, will disable alarming for the selected point. This functionality is only provided for users experiencing equipment malfunctions that may cause annoying alarms. When Alarm Disable is selected from the Poke Point menu, the following window will appear:



Microsoft Windows look and feel



RealFlex4 look and feel

The Alarm Enable/Disable window will display the PCU name, tag name and current alarm state for the selected point.

➔ **To Enable or Disable an alarm:**

Microsoft Windows look and feel:

- *To Disable* - Click on the "Disable alarm generation for this point" check-box. A tick will appear in the check-box, then click on the **Execute** button.

- *To Enable* - Click on the "Disable alarm generation for this point" check-box to remove the tick, then click on the **Execute** button.

RealFlex4 look and feel:

- *To Disable* - Click on the **DISABLED** button.

- *To Enable* - Click on the **ENABLED** button.

Once a selection has been made, the user will automatically be returned to the System-PCU Summary or graphic display from which the Poke Point menu was accessed.

To cancel the Alarm Enable/Disable process, click on the or button in the title bar of the window.

Once an alarm has been disabled, the associated value of the point will display with a yellow "A". Each time an alarm enable or disable option is selected, an entry is made in the Historical Alarm/Event summary unless the operator pulls the pin and cancels the process.

2.3.2 Dynamic Display Control - Realtime Controls

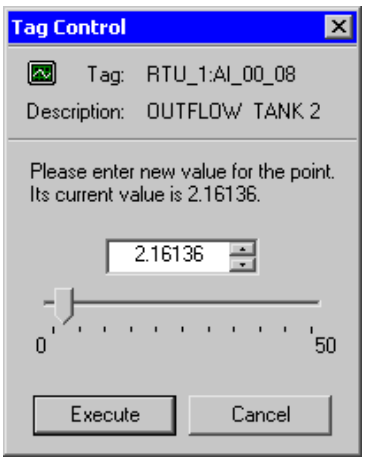
A "Control Point" is a dynamically updated element (or field) that is associated with a controllable device. When you click on one of these points, a window will appear displaying the PCU, Tag name and current value of the point. Control points can be located on the graphic display screen or on the System-PCU Summary screen.

Control points are created during system implementation, and can be created for "pseudopoints" (points not directly associated with actual physical devices) as well as database points associated with controllable devices. When a control is sent to a pseudopoint, the database value is changed, with no signals being sent to I/O devices.

Event messages are generated in the Historical Alarm/Event Summary and EVENT.YYYYMMDD logs to document the issuance of all operator-initiated control requests.

2.3.2.1 For Microsoft Windows look and feel

Tag Control for Analogs:



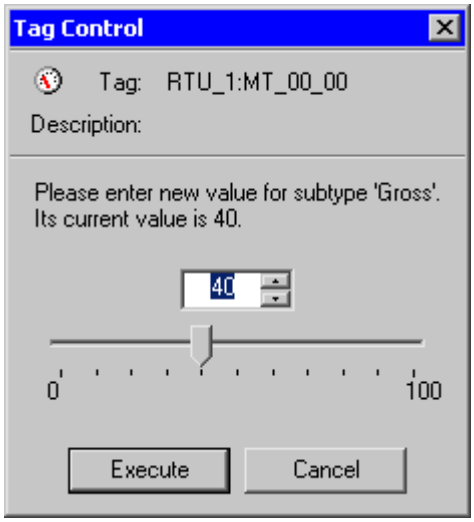
The Tag Control window is used to transmit a numeric value to the remote unit associated with the analog database point. There is no special alarm notification associated with controls sent to analog points, however, numerical displays of the value being controlled are displayed in white, and a ">" is appended to the display field until the associated control executed/failed indication is confirmed by the I/O driver.

The values in the Tag Control window can be changed three ways:

1. Click on the spinner buttons to change the value in 1% increments.
2. Click in the value field and type in the new value.
3. Click on and hold down the slider button and slide left or right to adjust value.

Analog controls are available from both graphic displays and System-PCU Summary screens.

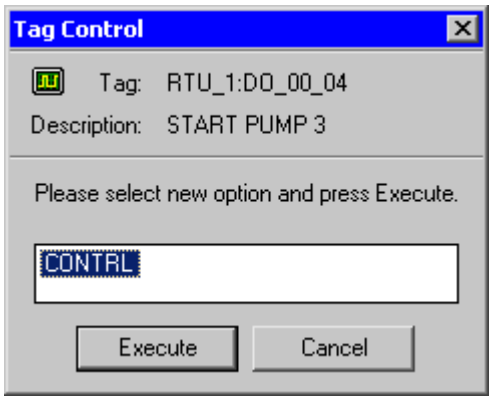
Tag Control for Meters:



The Tag Control window is similar in appearance and operation to the Analog Control window.

Meter controls are available from both graphic displays and System-PCU Summary screens.

Tag Control for Statuses:



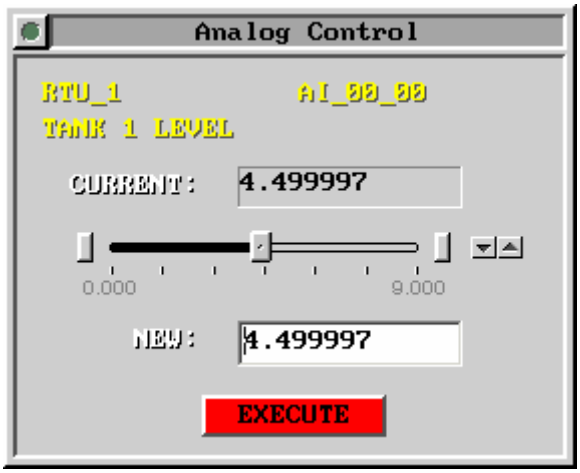
The Tag Control window facilitates sending control signals to the device associated with the status database point linked to the dynamic display.

To cause a value to be sent, click on the required value, then click on the Execute button. After a field device control is issued, the operator is notified, either through an alarm or an event notification, whether the device changes to the commanded state before control time-out occurs.

Status controls are available from both graphic displays and System-PCU Summary screens.

2.3.2.2 For RealFlex look and feel

Tag Control for Analogs:



The Analog Control window is used to transmit a numeric value to the remote unit associated with the analog database point. There is no special alarm notification associated with controls sent to analog points, however, numerical displays of the value being controlled are displayed in white, and a ">" is appended to the display field until the associated control executed/failed indication is confirmed by the I/O driver.

The values in the Analog control window can be changed three ways:

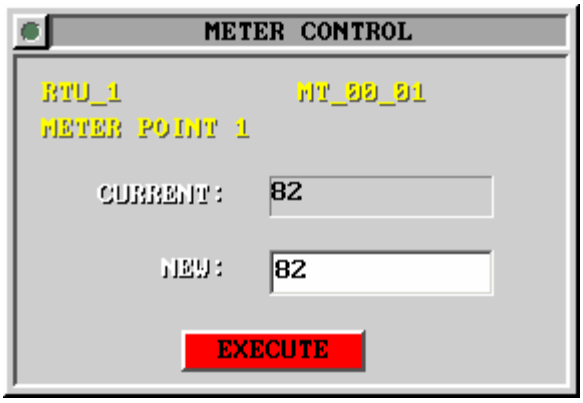
1. Click on the buttons to change the value in 1% increments.

2. Click in the "NEW" field and type in the new value.

3. Click on and hold down the slider button and slide left or right to adjust value.

Analog controls are available from both graphic displays and System-PCU Summary screens.

Tag Control for Meters:

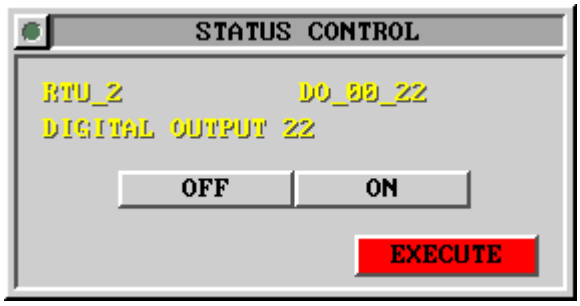


The Meter Control window is similar in operation to the Analog Control window.

The values in the Meter Control window can be changed by clicking in the "NEW" field and typing in the new value.

Meter controls are available from both graphic displays and System-PCU Summary screens.

Tag Control for Statuses:



The Status Control window facilitates sending control signals to the device associated with the status database point linked to the dynamic display.

To cause a value to be sent, click on the on-screen button for that value, then click on the **EXECUTE** button. After a field device control is issued, the operator is notified, either through an alarm or an event notification, whether the device changes to the commanded state before control time-out occurs.

Status controls are available from both graphic displays and System-PCU Summary screens.

2.4 Flex.View Summary Screens Data Summaries

Flex.View provides the Data-Type Summary utility to allow viewing all system database points of a given type on a multi-page display, (The **PageUp** and **PageDown** keys and the on-screen buttons can be used to scroll through the pages).

The points defined for the given type are shown listed alphabetically by tag name and grouped by PCU association. Values and states depicted represent a current-state "snapshot" at the time the summary was requested and thus, will not be updated to reflect realtime changes. As is applicable, alarm conditions will be indicated; however, alarm acknowledgements are not supported via these summaries.

Flex.View summary screens can be grouped into the following types:

Data-Type Summaries, see Section 2.4.1.

Historical Alarm/Event Summary, see Section 2.4.2.

Active Alarm Summary, see Section 2.4.3.

2.4.1 Data Summaries commands

RealFlex provides the Data-Type Summary utility to allow viewing of all system database points of a given type on a multi-page display.

The points defined for the given type are shown listed alphabetically by tag name and grouped by PCU association. Values and states depicted represent a current-state "snapshot" at the time the summary was requested and thus, will not be updated to reflect realtime changes. As is applicable, alarm conditions will be indicated.

While in realtime display mode, the Data Summary process is invoked via the **Main** menu. A pop-up menu is displayed to allow selection of the desired data-type summary.

Data-type summaries are:

- Analog
- Meter
- Status
- Tank
- Manual Overwrite
- Alarm Disabled
- Control Tagged
- Information Tagged

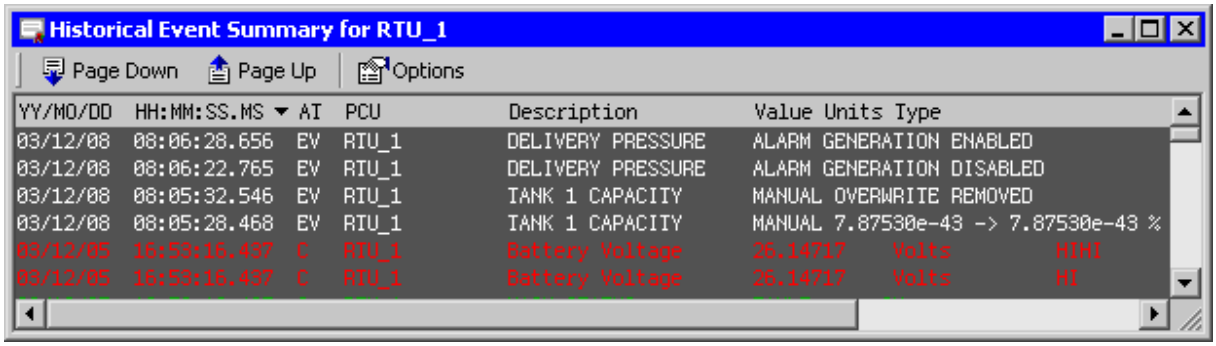
For all Data Summary screens the **PageUp** and **PageDown** keys or the on-screen **Page Up** and **Page Down** buttons can be used to scroll through the pages.

Alarms may also be acknowledged from the Analog, Status, Meter and Tank summary screens by page. To acknowledge all alarms on the page, click on the **Ack Page** button and select **Yes** to confirm acknowledgement.

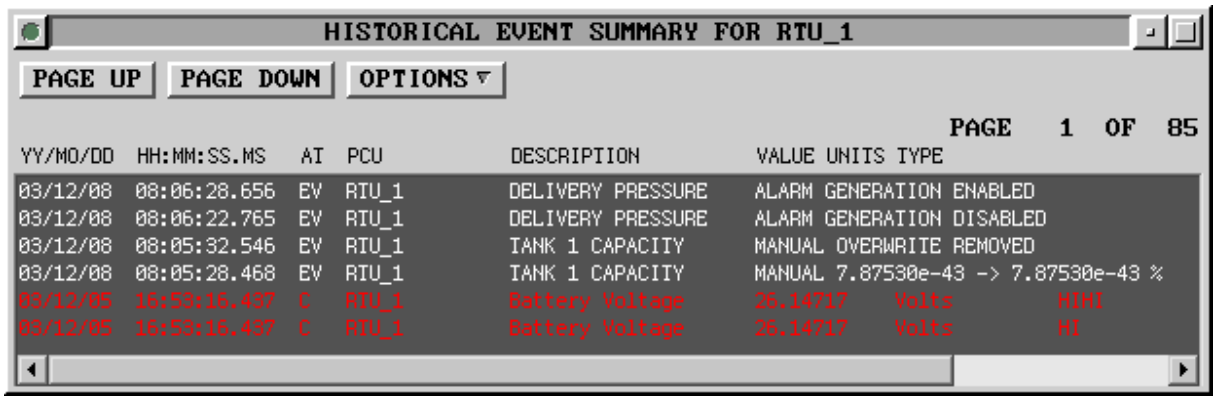
You can capture an image of the currently open Summary by sending it directly to the Printer using the "Print Window" option fro m the "Utilities" menu or you can copy the whole summary or the displayed page to the Clipboard as plain text. You can then paste the contents of the Clipboard into another application, (e.g., WordPad, Excel etc.). Right-click on the open summary and select **Copy Page** or **Copy All** from the pop-up menu.

2.4.2 Historical Alarm/Event

The Historical Event Summary display provides the operator with an easy-to-use mechanism to review alarms and events that have occurred during recent operations.


Historical Event Summary for RTU_1
Page Down
Page Up
Options
YY/MO/DD HH:MM:SS.MS AI PCU Description Value Units Type
03/12/08 08:06:28.656 EV RTU_1 DELIVERY PRESSURE ALARM GENERATION ENABLED
03/12/08 08:06:22.765 EV RTU_1 DELIVERY PRESSURE ALARM GENERATION DISABLED
03/12/08 08:05:32.546 EV RTU_1 TANK 1 CAPACITY MANUAL OVERWRITE REMOVED
03/12/08 08:05:28.468 EV RTU_1 TANK 1 CAPACITY MANUAL 7.87530e-43 -> 7.87530e-43 %
03/12/05 16:53:16.437 C RTU_1 Battery Voltage 26.14717 Volts HIHI
03/12/05 16:53:16.437 C RTU_1 Battery Voltage 26.14717 Volts HI

Microsoft Windows look and feel


HISTORICAL EVENT SUMMARY FOR RTU_1
PAGE UP
PAGE DOWN
OPTIONS
PAGE 1 OF 85
YY/MO/DD HH:MM:SS.MS AI PCU DESCRIPTION VALUE UNITS TYPE
03/12/08 08:06:28.656 EV RTU_1 DELIVERY PRESSURE ALARM GENERATION ENABLED
03/12/08 08:06:22.765 EV RTU_1 DELIVERY PRESSURE ALARM GENERATION DISABLED
03/12/08 08:05:32.546 EV RTU_1 TANK 1 CAPACITY MANUAL OVERWRITE REMOVED
03/12/08 08:05:28.468 EV RTU_1 TANK 1 CAPACITY MANUAL 7.87530e-43 -> 7.87530e-43 %
03/12/05 16:53:16.437 C RTU_1 Battery Voltage 26.14717 Volts HIHI
03/12/05 16:53:16.437 C RTU_1 Battery Voltage 26.14717 Volts HI

RealFlex4 look and feel

The first page of the Historical Event Summary display is requested by clicking on the **Main** menu button, selecting **RealFlex Summaries** and then selecting the **Historical Alarm/Event** option.

The summary is automatically generated by RealFlex and allows quick operational reference to historical operations of the system. Thus, the operator who must leave the control center to perform other duties can, upon his/her return, easily review events that occurred during his/her absence.

By default, this multi-page summary display contains a reverse chronologically ordered list of the latest 512 alarms, events or controls occurrences. This display is updated in a "push down" fashion, so the first line on Page 1 reflects the latest alarms, events or controls occurrence, the second line reflects the one before that, and so on. The operator moves from page to page by pressing the **PageUp** and **PageDown** keys or clicking on the **Page Up** and **Page Down** on-screen buttons. Paging of the display is circular. That is, if the page down button is selected while viewing the last page, the user will be moved to the first page of the display.

For a "Microsoft Windows look and feel" display, you can change the chronological order so that the first line on Page 1 reflects the oldest alarms, events or controls occurrence. To change the order, click on the "Time" column caption. An up arrow ▲ to the right of this caption indicates that the data has been sorted so that the oldest occurrence is at the top. A down arrow ▼ indicates that the data has been sorted so that the latest occurrence is at the top.

Alarms cannot be acknowledged while viewing the Historical Event Summary, which is provided for information purposes only. However, the alarm silence on-screen button may be used while viewing this multi-page summary, and access to the Alarm Lines display remains available.

The user may also request a hardcopy of this summary. Special notice should be taken that if the Calarmproc processor was activated at system startup with the -e command line option, daily alarm/event history (EVENT.YYMMDD) files will be maintained on the hard disk in the /realflex/data/events subdirectory.

If you click on the **Options** on-screen button, a pop-up menu will be displayed.

By selecting one of the options, the user may change the way data is displayed:

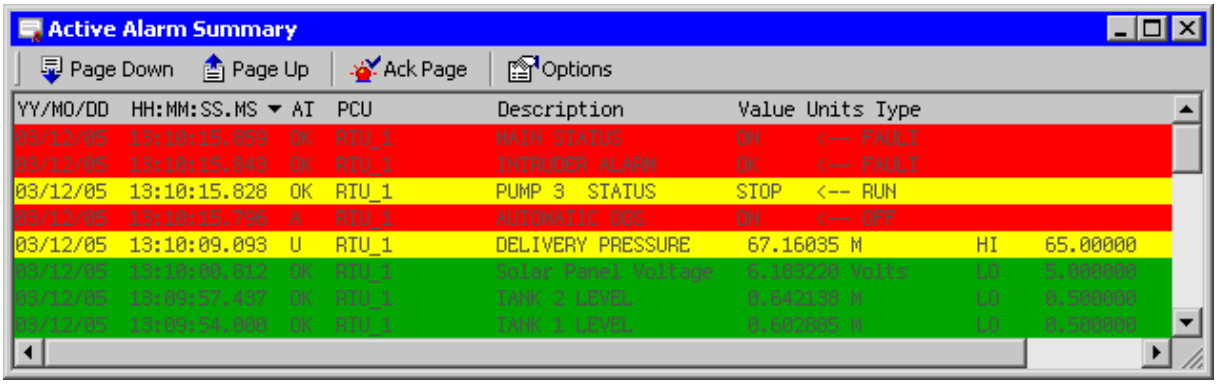
Show For All PCU - all alarm points for all PCU's will be displayed.

Show For Selected PCU - allows you to view alarms for a selected PCU. On selecting this option, a window listing all available PCU's will be displayed. Click on the required PCU.

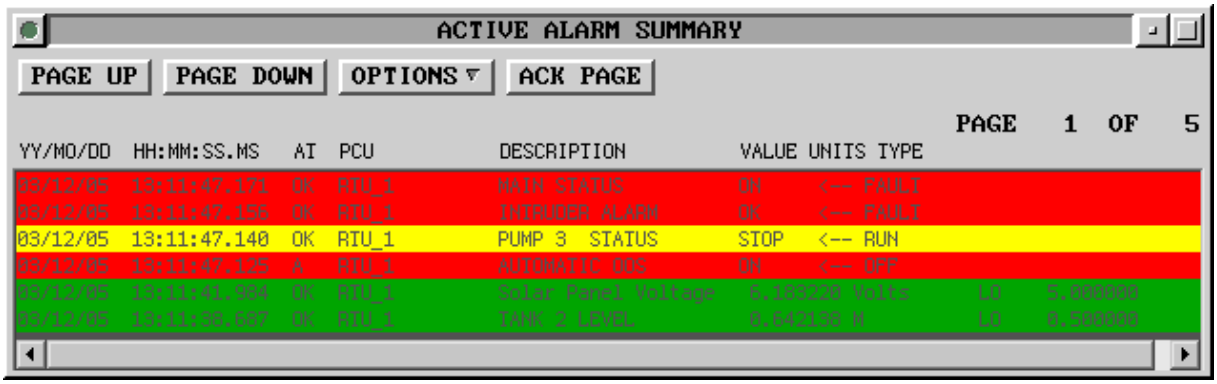
PCU/Tag Switch - will display the Tag name instead of the PCU name.

2.4.3 Active Alarms

The Active Alarm Summary display, as shown below, provides the operator with an easy to use mechanism to review points in the system that are currently in an alarm condition.


Active Alarm Summary
Page Down
Page Up
Ack Page
Options
YY/MO/DD HH:MM:SS.MS AI PCU Description Value Units Type
03/12/05 13:10:15.828 OK RTU_1 PUMP 3 STAIUS STOP <-- RUN
03/12/05 13:10:09.093 U RTU_1 DELIVERY PRESSURE 67.16035 M HI 65.00000

Microsoft Windows look and feel


ACTIVE ALARM SUMMARY
PAGE UP
PAGE DOWN
OPTIONS
ACK PAGE
PAGE 1 OF 5
YY/MO/DD HH:MM:SS.MS AI PCU DESCRIPTION VALUE UNITS TYPE
03/12/05 13:11:47.140 OK RTU_1 PUMP 3 STAIUS STOP <-- RUN

RealFlex4 look and feel

As data values or states return to being within normal limits or reflect acceptable conditions, the associated alarm message will be automatically removed from this summary and replaced with an "OK" or return-to-normal message which will subsequently be removed upon acknowledgement.

The first page of the Active Alarm Summary display is accessed by clicking on the **Main** menu button, selecting **RealFlex Summaries** and then selecting **Active Alarms**.

The summary is automatically generated by RealFlex and allows quick operational reference to alarms within the system. Thus, the operator who must leave the control center to perform other duties can easily review critical system information upon his/her return.

By default, this multi-page summary display contains a reverse chronologically ordered list of alarm log information for the latest 127 points remaining in alarm. This display is updated in a "push down" fashion, so the first line on Page 1 reflects the latest alarm occurrence, the second line reflects the one before that, and so on. The operator moves from page to page by pressing the **PageUp** and **PageDown** keys or clicking on the **Page Up** and **Page Down** on-screen buttons. Paging of the display is circular. That is, if the page down button is selected while viewing the last page, the user will be moved to the first page of the display.

For a "Microsoft Windows look and feel" display, you can change the chronological order so that the first line on Page 1 reflects the oldest alarm occurrence. To change the order, click on the "Time" column caption. An up arrow ▲ to the right of this caption indicates that the data has been sorted so that the oldest alarm occurrence is at the top. A down arrow ▼ indicates that the data has been sorted so that the latest alarm occurrence is at the top.

If you click on the **Options** on-screen button, a pop-up menu will be displayed.

By selecting one of the options, the user may change the way data is displayed:

Show For All PCU - all alarm points for all PCU's will be displayed.

Show For Selected PCU - allows you to view alarms for a selected PCU. On selecting this option, a window listing all available PCU's will be displayed. Click on the required PCU.

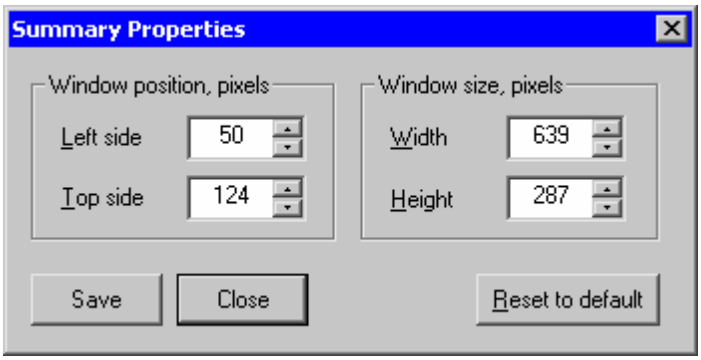
PCU/Tag Switch - will display the Tag name instead of the PCU name.

Alarms may also be acknowledged from this screen either singly or by page. To acknowledge all alarms on the page, click on the **Ack Page** button and select **Yes** to confirm acknowledgement. To acknowledge a single alarm, click on the alarm line and select **Yes** to confirm acknowledgement.

2.4.4 Summary properties window

➔ **To move or size a Summary display:**

1. Right-click on the open summary and select **Properties** from the pop-up menu. The "Summary Properties" window will appear:



2. Using the spinner buttons you can change the summaries position in the screen or its size.

   Note: As you click on the spinner buttons, the display being altered will actively change on the screen.

Once you have made your changes, click on the **Save** button.

If you want to return the summary to its original size and position, click on the **Reset to default** button.

If you want to abandon the changes you have made, click on the **Close** button.

Reports

Flex.View provides a variety of standard printed reports, the ability to copy the current screen display to a printer, and accessing reports generated by the user.

Report types available are:

Print Window - Used to print a copy of the active Flex.View display. See Section 4.2.1.

User Reports - Allows you to print standardized reports and Flex.Reports generated via the "Configuration - Report Generator" option. You can also access additional RealFlex Utilities and printed summaries reflecting system data. See Section 4.1.3.1.

Selective Alarm print - Allows you to request a partial or complete report of the alarms. See Section 4.1.3.2.

Schedule Report - Used to schedule and execute saved reports on a timed basis. See Section 4.2.4.

RealFlex Summary Reports - Used to print the contents of the System PCU, Communications, Active Alarms and Historical Alarm/Events summary reports. See Section 4.1.1.

Data Summary Reports - Used to view and print the contents of the Analog, Meter, Status, Tank, Manual Overwrite, Alarm Disabled, Control Tagged and Information Tagged data summary reports. See Section 2.4.1.

Print Alarm Page - Used to print the contents of the Alarm page. See Section 4.2.3.

3 Database Implementation

3.1 Database Implementation Overview

The Flex.View Database Editor allows the user to define the information necessary for polling points which have been defined in a physical Remote Terminal Unit (RTU) or Programmable Logic Controller (PLC) device. A PCU (Process Control Unit) in the Flex.View Database Editor represents the user's logical breakdown of the items which are being monitored or controlled in the field by each individual PLC or RTU. The user can define any number of PCUs necessary. It is possible for one PLC or RTU to report information to multiple PCUs. If a point in a PCU has been configured to communicate with different PLCs or RTUs, the communication with these devices cannot occur simultaneously. The points defined in the physical device (PLC/RTU) may include pressure values, status of valves (open/closed), status of generators, or meter accumulation points.

The database consists primarily of points identified by tag name and textual description that are scanned from the user's field devices (PLC/RTU). These scan points are categorized in the database by data type. RealFlex supports 32,000 points per database type. Database types supported by the RealFlex system include Analog, Status (digital), Meter (accumulator) and Tank. Other points found in the database include pseudopoints, which are points that are defined to act as accumulators for calculations on other points, etc.

The "SYSTEM" PCU is used by RealFlex to control and report the status of CSLs (optional Control Sequence Language processor), Superkeys (a Display Format dynamic type), printers and hard drive utilization information. The "SYSTEM" PCU should not be removed.

3.2 Database Point Definition Overview

Each database type has a customized screenform used for definition of unique tag names, point descriptions and other pertinent information describing the operational characteristics of the database point. The database types supported by RealFlex are Analog, Meter, Status and Tank.

Analog: Scan points that record floating point data converted from a device reporting, for example, a range of 4 to 20 milliamps in raw counts. Analog value ranges are defined for individual points by defining the appropriate engineering units being read from the field. The maximum number of analog points supported is 32,000.

Meter: Used to track and report any type of cumulative measurement or quantity that can be expressed as an integer. The maximum number of points supported is 32,000.

Status: Represent two or four state indicators, e.g., on/off, high/low, set/reset, invalid/open/closed/travel, etc. (also called digital I/O points). The maximum number of status points supported is 32,000.

Tank: Used to store a variety of information regarding the contents of tanks. Current data is not available on database edit screens, as is the case with other database point types, but appears in standard reports, and can be used in custom reports and Display Format dynamic displays. The information supplied by the user during database implementation relates to the level of the product in the tank and alarming for low and high levels. The maximum number of tank points supported is 32,000.

Pseudopoints

By placing the appropriate entries in Analog, Meter, Status or Tank database records, "pseudopoints" can be created. One type of pseudopoint is created by placing "-1" in the POINT OFFSET field. This causes the I/O driver associated with the PCU to which the point belongs to ignore the point for input purposes. This point can be used to store and display calculated or operator supplied values. Some pseudopoints contain a 99 in the EU TYPE or CONTROL TYPE field. An EU TYPE of 99 will disable the scaling option of MIN/MAX EU. A CONTROL TYPE of 99 when used in conjunction with a -2 point offset identified to the I/O driver that there is no hardware associated with the point, and that when a control is sent to the point, only the database value is changed. A "-2" value is an unscanned control point which represents a pseudopoint output only value and is only updated when a control is issued for that database point. Refer to I/O driver documentation and associated point-type data sheet for more specific information.

3.3 Database Editor

The "Database Editor" option from the "Configuration" menu allows a user to access and edit the Database of the currently open Project.

Flex.View users with a Development licence and appropriate user-level access can Add, Delete and Edit PCU's and their associated Tag properties.

Flex.View user with a Runtime licence and appropriate user-level access can access and edit certain fields in the Database Editor. Fields that cannot be edited are associated with I/O driver point information and are grayed out.

➔ **To access the Database Editor:**

Note: Access to the Database Editor may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

- From the **Configuration** menu, select the **Database Editor** option. The "Database Editor - List of project PCU:" window will appear listing all PCU's on the system.

  For details of the display, please refer to Section 3.3.1, "Database Editor - List of project PCU window".

➔ **To view the database points for a particular PCU:**

- From the "Database Editor - List of project PCU:" window, double click on the required PCU. The "Database Editor - Tags for (*PCU name)* PCU:" window will appear listing all currently defined tags for the selected PCU.

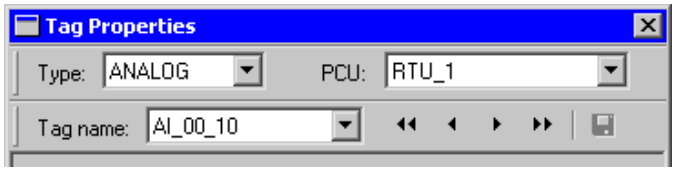
  For details of the display, please refer to Section 3.3.2, "Database Editor - Tags for (*PCU name)* PCU window" topic.

➔ **To view the "Tag properties" window for a particular point:**

- From the "Database Editor - Tags for (*PCU name)* PCU:" window, either double click on the required point, or select and highlight the required point then click on the button. The "Tag Properties" window will appear for the selected point.

Each database type has a customized "Tag Properties" window used for definition of unique tag names, point descriptions and other pertinent information describing the operational characteristics of the database point. The database types supported by Flex.View are Analog, Status, Meter and Tank.

From the currently open "Tag Properties" window, the fields in the top of the window (see below) can be used to select and view any of the available points on the system. This is useful if you have many Tag properties to edit.



➔ **To select required point from the Tag properties window:**

1. Select the PCU by clicking on the field or button and selecting the required PCU from the drop-down list.

2. Select the Type by clicking on the field or button and selecting the required type from the drop-down list, ANALOG, METER, STATUS or TANK.

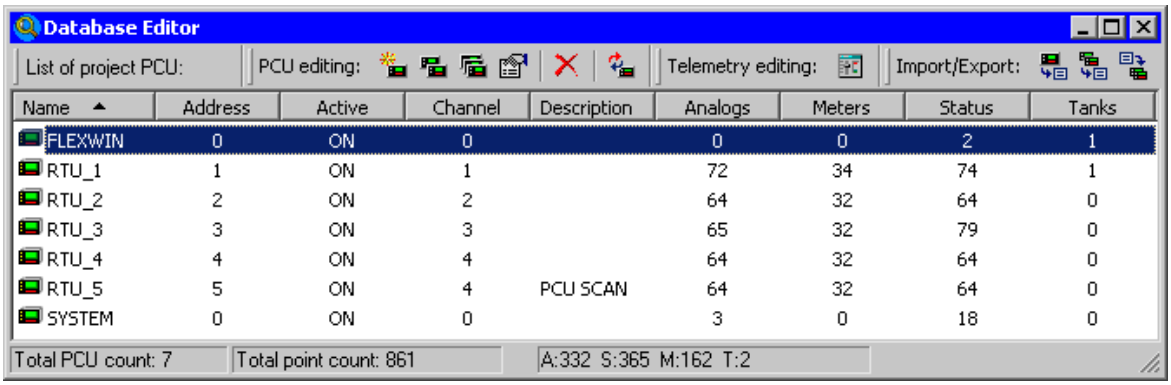
3. Select the Tag name by clicking on the field or button and selecting the required Tag name from the drop-down list, or use the buttons to scroll through the available Tag names.

3.3.1 Database Editor - List of project PCU window

➔ **To access the Database Editor:**

Note: Access to the Database Editor may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

 From the **Configuration** menu, select the **Database Editor** option. The "Database Editor - List of project PCU:" window will appear listing all PCU's on the system:



The "PCU editing:" and "Import/Export:" toolbars are only visible for Flex.View users with a Development licence and appropriate user-level access.

The significance of each column in the display is:

Name - The name of the PCU.

Address - This represents the PCU address for the associated channel. This number is a "decimal" representation (maximum = 65535) of the address encoded in the physical remote unit and included in I/O message exchanges, if required by the I/O driver protocol.

Active - Represents the current "state" of PCU scan/control permissiveness. "ON" signifies that the PCU is communicating with the I/O driver and the field device, "OFF" indicates that the PCU is not communicating.

Channel - A number between 1 and 16 that is used by the I/O driver software to identify the PCU or PCUs to be serviced by each driver.

Description - A description for the PCU. Maximum of 20 characters including spaces.

Analogs - The total number of Analog points.

Meters - The total number of Meter points.

Status - The total number of Status points.

Tanks - The total number of Tank points.

In the Status bar at the bottom of the window is displayed the total number of PCUs, total point count and the total number of Analog, Status, Meter and Tank points for the system.

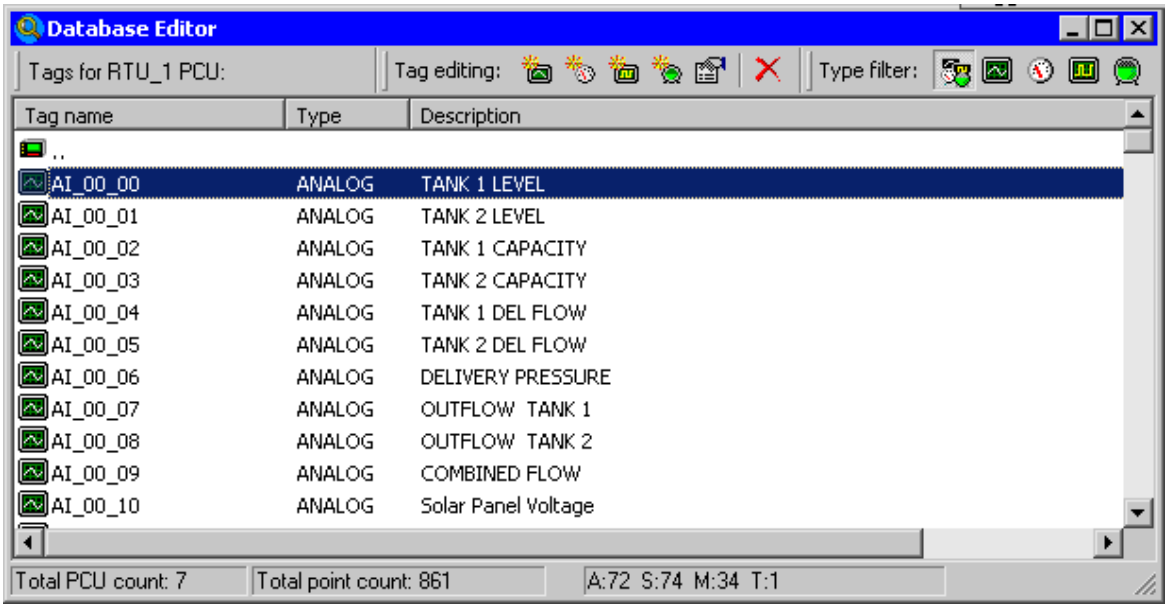
3.3.2 Database Editor - Tags for (PCU name) PCU window

➔ **To access the Database Editor:**

Note: Access to the Database Editor may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

1. From the **Configuration** menu, select the **Database Editor** option. The "Database Editor - List of project PCU:" window will appear listing all PCU's on the system.

2. From the "Database Editor - List of project PCU:" window, double click on the required PCU. The "Database Editor - Tags for (*PCU name)* PCU:" window will appear listing all currently defined tags for the selected PCU:



The "Add..." and "Delete Tags" buttons in the "Tag editing:" toolbar are only visible for Flex.View users with a Development licence and appropriate user-level access.

➔ **To filter data by Tag type:**

You can filter the display by using the "Type filter:" buttons in the top right-hand side of the window. Choices are:

All types | Analogs | Meters

Status | Tanks

➔ **To return to the "List of project PCU:" window:**

- Double click on the .. icon in the top left-hand side of the window.

3.3.3 To Add, Duplicate, Replicate, Edit and Delete PCU's

PCU editing can only be carried out by Flex.View users with a Development licence and appropriate user-level access.

The "Database Editor - List of project PCU:" window is used to create and define PCUs and their associated database points. The screen displays a listing of all PCUs defined for the system, the address, the active status, channel number, current total point count, and the number of status, analog, meter and tank database points currently defined for each PCU.

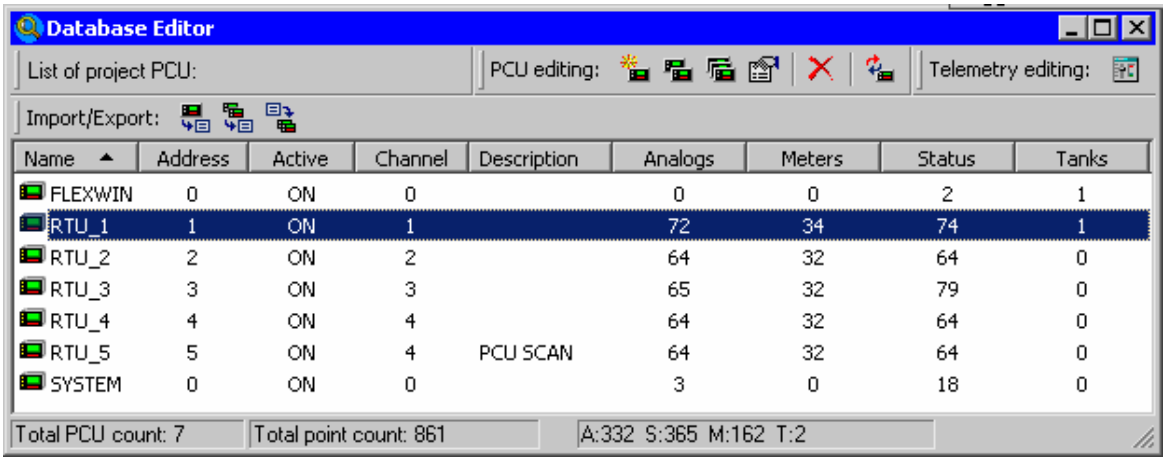
A PCU is used to group database points that are receiving information from the field utilizing the same communications protocol. If a different communications protocol is used, then the PLCs/RTUs are being scanned on a time basis.

➔ **To access the Database Editor:**

Note: Access to the Database Editor may be disabled or protected by a password. For information on user access levels, please refer to the “Password Maintenance“ topic.

- From the **Configuration** menu, select the **Database Editor** option.

  The "Database Editor - List of project PCU:" window will appear listing all PCU's on the system:



The significance of each column in the display is:

Name - The name of the PCU.

Address - This represents the PCU address for the associated channel. This number is a "decimal" representation (maximum = 65535) of the address encoded in the physical remote unit and included in I/O message exchanges, if required by the I/O driver protocol.

Active - Represents the current "state" of PCU scan/control permissiveness. "ON" signifies that the PCU is communicating with the I/O driver and the field device, "OFF" indicates that the PCU is not communicating.

Channel - A number between 0 and 99 that is used by the I/O driver software to identify the PCU or PCUs to be serviced by each driver.

Description - A description for the PCU. Maximum of 20 characters including spaces.

Analogs - The total number of Analog points.

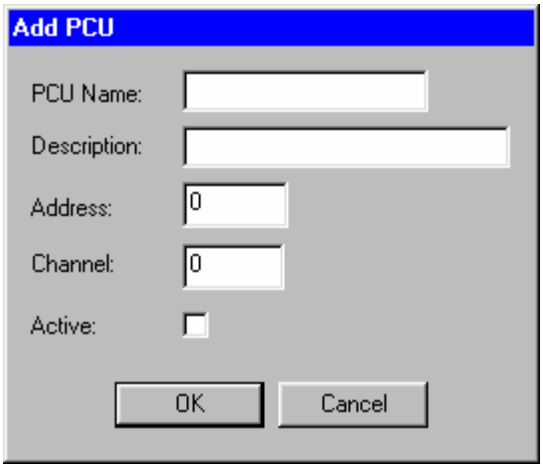
Meters - The total number of Meter points.

Status - The total number of Status points.

Tanks - The total number of Tank points.

➔ **To Add a new PCU record to the RealFlex database:**

1. Click on the button. The "Add PCU" dialog box will appear:



2. Click on the "PCU Name:" field and enter a name for the PCU.

   Each unique PCU name can be a maximum of 12 characters (including periods, dashes and underscores) and cannot be changed once it is created. Once the PCU name is entered, it will automatically default to display in all capital letters. If the user elects to change the name of a defined PCU, they must add a new PCU name to the RealFlex database using the "Duplicate PCU" or "Replicate PCU" function to copy the defined database points from the old PCU name to the newly created one. The user can then delete the original PCU. Once the PCU has been added.

3. Click on the "Description:" field and enter a description for the PCU. Can be a maximum of 20 characters (including periods, dashes and underscores).

4. Click on the "Address:" field and enter the PCU address.

5. Click on the "Channel:" field and enter the applicable channel number. The PCU may be left inactive until the entire configuration process is complete. The active state of the PCU may be changed at any time using the "Edit PCU" function.

6. Click on the **OK** button. The RealFlex database will be updated and you will be returned to the "Database Editor - List of project PCU:" window where the new PCU will now be included in the list of PCU's.

7. Create and define associated analog, status, meter and tank database points.

➔ To Duplicate a PCU record:

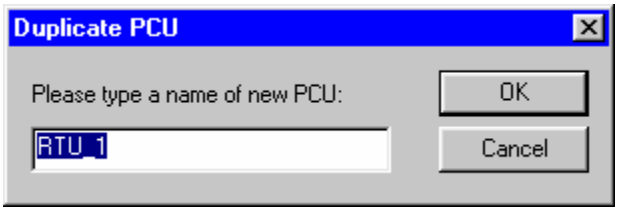
The "Duplicate PCU" function is used to make a copy of an existing PCU and its associated tag points.

If you want to make multiple copies or overwrite existing PCU's with a copy of an existing PCU, use the "Replicate PCU" function.

Prior to using this function, ensure that all applicable data points to be copied have been defined, and that all PCU records to which these are to be copied have also been defined.

1. Click on and highlight the PCU to be copied.

2. Click on the button. The "Duplicate PCU" dialog box will appear:



3. The name of the PCU being copied will appear in the "Please type a name of new PCU:" field. Type over this name entering a name for the new PCU (maximum of 12 characters including periods, dashes and underscores), then click on the **OK** button. You will be prompted to confirm the duplication of the PCU with a "Yes/No" selection.

   If you entered a PCU name that already exists, a message will appear "This PCU already exists", if so, click on the **OK** button and enter new name once more.

   The RealFlex database will be updated and you will be returned to the "Database Editor - List of project PCU:" window where the new PCU will now be included in the list of PCU's.

Note: If you have elected to use the "Duplicate PCU" function to rename a PCU, all dynamics placed in graphic displays and any historical recording in effect for the copied/deleted database points will be removed and are not recoverable.

➔ To Replicate a PCU record:

The “Replicate PCU” function is an advance version of the "Duplicate PCU" function and is used to make multiple copies of an existing PCU and its associated tag points.

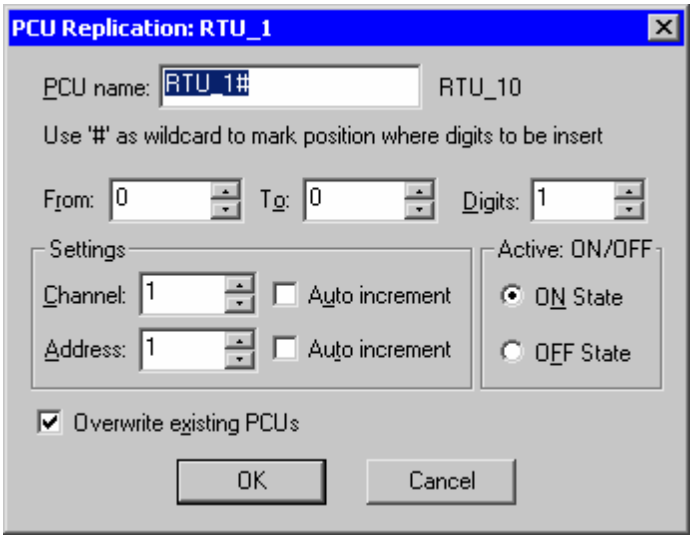
You may have many identical PCU's (RTU’s), where the only difference is the address of the units. This function allows you to create your database with the minimum of effort. For example, you would create the database for one PCU and then using the "Replicate PCU" function to copy it as many times as you want.

You can also use this option to overwrite existing PCU's with a copy of the PCU being replicated.

Prior to using this function, ensure that all applicable data points for the PCU to be replicated have been defined, and that all PCU records to which these are to be copied have also been defined.

1. Click on and highlight the PCU to be replicated.

2. Click on the button. The "PCU Replication: (*PCU name*)" dialog box will appear:



The top section of this window is used to set the names for the PCU's being created. There are two other sections, "Settings" and "Active: ON/OF" and an “Overwrite existing PCU’s” check-box.

3. In the "PCU name:" field, the name of the PCU being replicated has been entered with a # added to it. Type in required name for the first PCU adding a # at the end. A preview for the first PCU is displayed to the right of this field.

   Depending on what you set in the "From:", "To:" and "Digits:" fields, the # is used as a wildcard to mark the position where digits are to be inserted.

   Note: A PCU name must be no longer than 12 characters including periods, dashes and underscores. If the PCU names being created are likely to exceed the 12 characters, a message "Cannot generate name" will appear to the right of the "PCU name:" field.

4. In the "From:" field, enter a number to start from and in the "To:" field, enter a number to end at. May be set from 0 to 8388608. Examples are shown below.

5. In the "Digits:" field, enter a number to represent the number of digits for the # in the PCU name. Can be set from 1 to 12 depending on the PCU name not exceeding 12 characters. Examples are shown below.

   Example 1: You want to replicate RTU_1 five times to create RTU_2 to RTU_6, you would enter a PCU name of **RTU_#,** enter a **2** in the "Start:" field, enter a **6** in the "To:" field and leave the "Digits:" field at **1**.

   Example 2: You want to replicate RTU_1 one hundred times to create RTU_101 to RTU_200, you would enter a PCU name of **RTU_1#,** enter a **1** in the "Start:" field, enter a **100** in the "To:" field and set the "Digits:" field at **2**.

   Example 3: You want to replicate RTU_1 fifty times to overwrite ten existing PCU's (RTU_101 to RTU_110) and create forty new PCU's (RTU_111 to RTU_150), you would enter a PCU name of **RTU_1#,** enter a **1** in the "Start:" field, enter a **50** in the "To:" field and set the "Digits:" field at **2**.

6. In the "Address:" field, enter the PCU address for the first PCU or all PCU's being created.

   If you want the Address to be incremented for each PCU being created, click on the "Auto increment" check-box to the right of this field. A tick will appear when active. The Address for the PCU's may be changed at any time using the "Edit PCU" function.

7. In the "Channel:" field, enter the applicable channel number for the first PCU or all PCU's being created.

If you want the channel number to be incremented for each PCU being created, click on the "Auto increment" check-box to the right of this field. A tick will appear when active. The channel number for the PCU's may be changed at any time using the "Edit PCU" function.

8. In the "Active: ON/OFF" section, select required option, **ON State** or **OFF State**. The PCU's may be left inactive (OFF) until the entire configuration process is complete. The active state of the PCU's may be changed at any time using the "Edit PCU" function.

9. If you are creating new PCU's that have the same names as existing PCU's, you can overwrite these existing PCU's with a copy of the PCU being replicated. To overwrite existing PCU's, click on the “Overwrite existing PCU’s” check-box. A tick will appear when active.

10. Click on the **OK** button. You will be prompted to confirm the execution of the PCU replication with a "Yes/No" selection.

    If you are overwriting existing PCU's and you failed to tick the “Overwrite existing PCU’s” check-box, you will be prompted to confirm the overwriting of the existing PCU's with a "Yes/No/Cancel" selection.

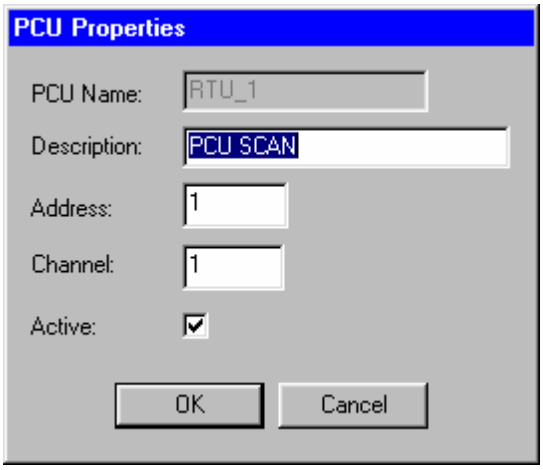
    The RealFlex database will be updated and you will be returned to the "Database Editor - List of project PCU:" window where the new PCU(s) will now be included in the list of PCU's.

➔ **To Edit a PCU record:**

1. Click on and highlight the PCU to be edited.

2. Click on the button, or position the pointer over the selected PCU, click right mouse and select **Edit PCU** from the pop-up menu.

   The "PCU Properties" dialog box will appear:



3. Edit the PCU Description, Address, Channel number and make the PCU active (tick in check-box) or inactive (no tick in check-box) as required.

4. Click on the **OK** button. The RealFlex database will be updated and you will be returned to the "Database Editor - List of project PCU:" window.

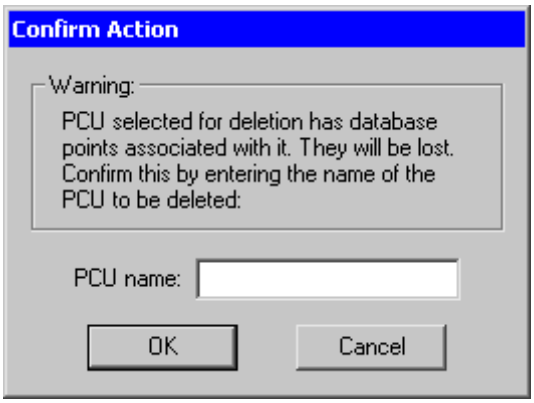
➔ **To Delete a PCU record:**

PCU's can be deleted, just as any other database data point type, from the RealFlex database.

1. Click on and highlight the PCU to be deleted.

2. Click on the button, or position the pointer over the selected PCU, click right mouse and select **Delete PCU** from the pop-up menu.

   If there are no associated datapoints defined for the selected PCU, you will be prompted to confirm deletion with a "Yes/No" selection. If any defined database points are associated with the selected PCU, a "Confirm Action" dialog box will appear where you will be prompted to confirm deletion of the PCU by typing in the name of the PCU to be deleted then clicking on the **OK** button.


Confirm Action
Warning:
PCU selected for deletion has database points associated with it. They will be lost. Confirm this by entering the name of the PCU to be deleted:
PCU name:
OK
Cancel

Upon confirmation, all of the associated scan points will be deleted along with the PCU.

Note: When the PCU is deleted, all defined database points associated with the PCU will also be deleted. In addition, all Display Dynamics and any historical recording in effect for the deleted database points will be removed and are not recoverable.

3.3.4 Importing/Exporting PCU's

Importing/Exporting PCU's can only be carried out by Flex.View users with a Development licence and appropriate user-level access.

The Importing/Exporting PCU's options allow the importing and exporting of PCU data to a Microsoft Excel CSV file and are primarily used by system administrators to create a database or to edit large amounts of data within an existing database.

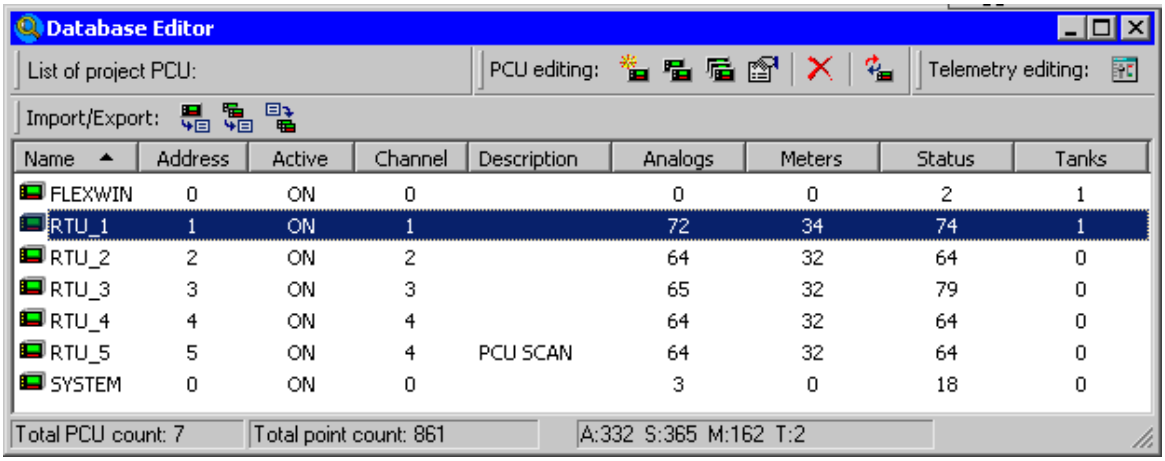
The system administrator may choose to use Excel to create their database. Once the database has been created within Excel, it can then be imported into Flex.View via the Database Editor.

The Flex.View Database Editor only allows for single point editing. If you had say 5000 records, all with one field to be changed, it would be much quicker to edit these within Excel. After the changes have been made you can import the CSV file back into Flex.View.

➔ **To access the Database Editor:**

From the **Configuration** menu, select the **Database Editor** option. The "Database Editor - List of project PCU:" window will appear listing all PCU's on the system:

Note: Access to the Database Editor may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.



➔ **To save a selected PCU to a CSV file:**

1. Click on and highlight the PCU to be saved as a CSV file.

2. Click on the button. The "Save as CSV file" dialog box will appear.

3. Indicate the location and the name of the file to be exported, the file name can differ from the default name entered, then click on the **Save** button. The "Save as type" will always be "CSV File (*.csv)". You will be returned to the "Database Editor - List of project PCU:" window.

➔ **To save all Project PCU's to a CSV file:**

1. Click on the button. The "Save as CSV file" dialog box will appear.

2. Indicate the location and the name of the file to be exported, the file name can differ from the default database name entered, then click on the **Save** button. The "Save as type" will always be "CSV File (*.csv)".

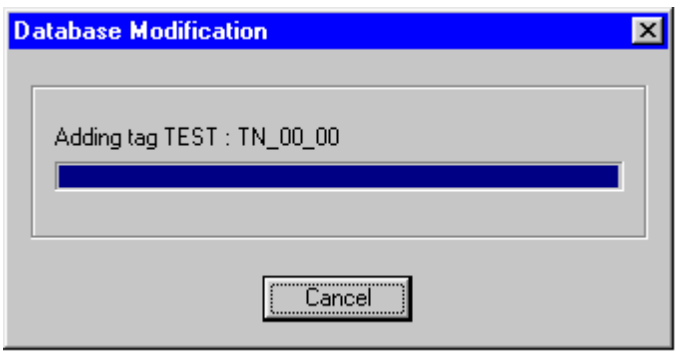
   You will be returned to the "Database Editor - List of project PCU:" window.

➔ **To import a CSV file into the database:**

Note: You must be connected to the RealFlex server before you can use this option.

1. Click on the button. The "Import CSV file" dialog box will appear.

2. Locate the file to be imported, then click on the **Open** button. The "Files of type" will always be "CSV File (*.csv)". The "Database Modification" window will appear, displaying the progress of PCU or Project Tag data being updated on the RealFlex server.



After the PCU or Project Tag data has been updated, you will be returned to the "Database Editor - List of project PCU:" window.

3.3.5 To Warmstart a PCU

When configuring new PCU's or re-configuring existing PCU's during online operation, it may be desirable to warmstart the I/O driver(s) that are currently executing on a specific channel.

This allows the I/O driver to rebuild its scan tables and pick up all information entered since the last time RealFlex was restarted. Refer to the applicable I/O driver data sheet to determine whether your scanner supports this function.

Note: If warmstart is not selected, the new definitions will go into effect the next time RealFlex is shutdown and restarted.

➔ **To warmstart a PCU:**

Note: Access to the Database Editor may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

1. From the **Configuration** menu, select the **Database Editor** option. The "Database Editor - List of project PCU:" window will appear listing all PCU's on the system:

2. Click on and highlight the PCU you want to warmstart.

3. Click on the button, or position the pointer over the selected PCU, click right mouse and select **Warmstart PCU** from the pop-up menu.

   The "Operation in progress.." window will appear for a moment and the following message will appear when successful:

   Any errors are reported by the displaying of messages. Respond to these messages as required.

3.4 To edit Telemetry settings

Telemetry editing can only be carried out by Flex.View users with appropriate user-level access.

Telemetry editing allows a user to edit the telemetry setting parameters for each PCU and its associated communications channel.

If there is a Telemetry Editor window associated with the I/O driver for the selected PCU, it will appear and allow the user to enter the required telemetry data. This basic information varies depending upon the protocol of the PLC or RTU. Some examples of telemetry data that may be required are: the maximum number of each database point type reported by the remote unit, the phone number used for automatically dialling the remote device, and the dialup delay interval. Informational fields may provide system performance or state for the I/O driver. For more details regarding telemetry editor window information, refer to the applicable I/O Driver data sheet for your system.

Telemetry editing is carried out via the "Database Editor - List of project PCU:" window.

Important: Before you can edit the Telemetry setting, the Channels Configuration file "/realflex/data/crt/fwd/tel/driver.chn" must be created manually using the "Configuration File Editor" option from the "Configuration" menu.

➔ **To edit Telemetry settings:**

Note: Access to the Database Editor may be disabled or protected by a password. For information on user access levels, please refer to the “Password Maintenance“ topic.

1. From the **Configuration** menu, select the **Database Editor** option. The "Database Editor - List of project PCU:" window will appear listing all PCU's on the system.

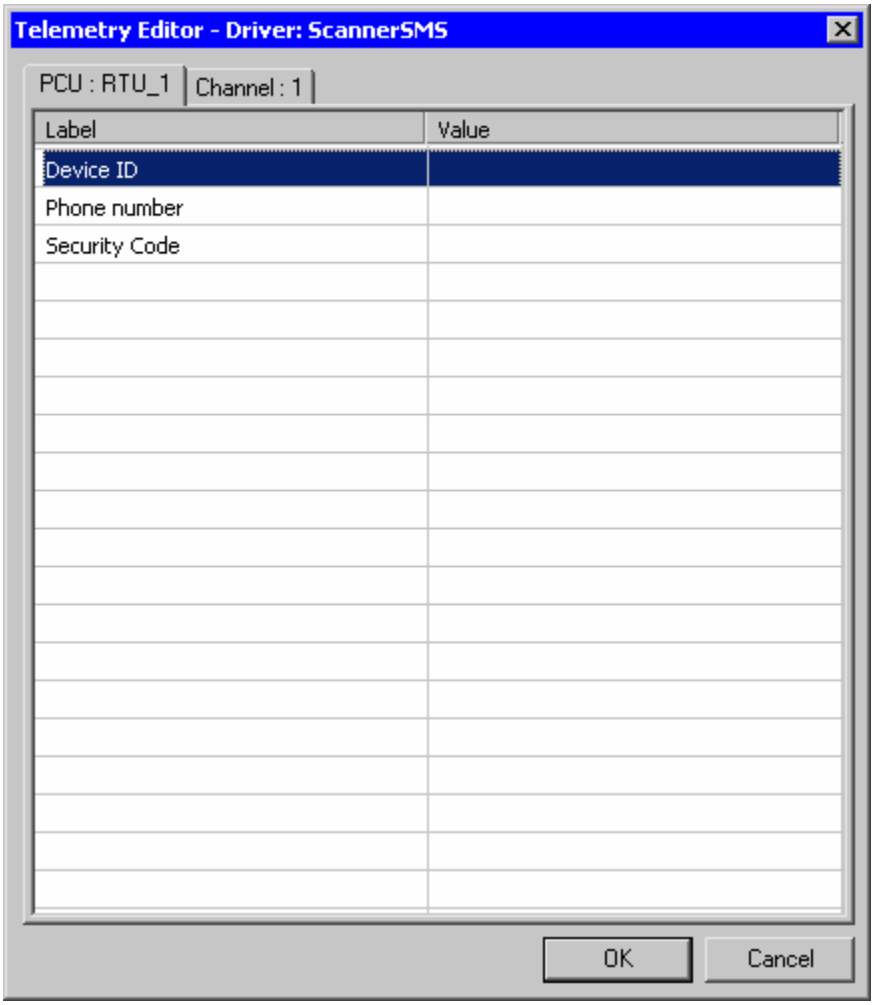
2. Click on and highlight the PCU name for which you want to edit the telemetry settings.

3. In the "Telemetry editing" toolbar, click on the button, or position the pointer over the selected PCU, click right mouse and select **Telemetry Editor** from the pop-up menu.

   An "Operation In Progress" window will appear while Flex.View makes contact with the RealFlex server to retrieve the channels description file, driver configuration file and channel driver setting information.

   If a driver has not been specified in the "driver.chn" file for the selected channel, then the message "No driver was specified for x channel" will be displayed. You can specify a driver in the "driver.chn" file using the "Configuration File Editor" option from the "Configuration" menu.

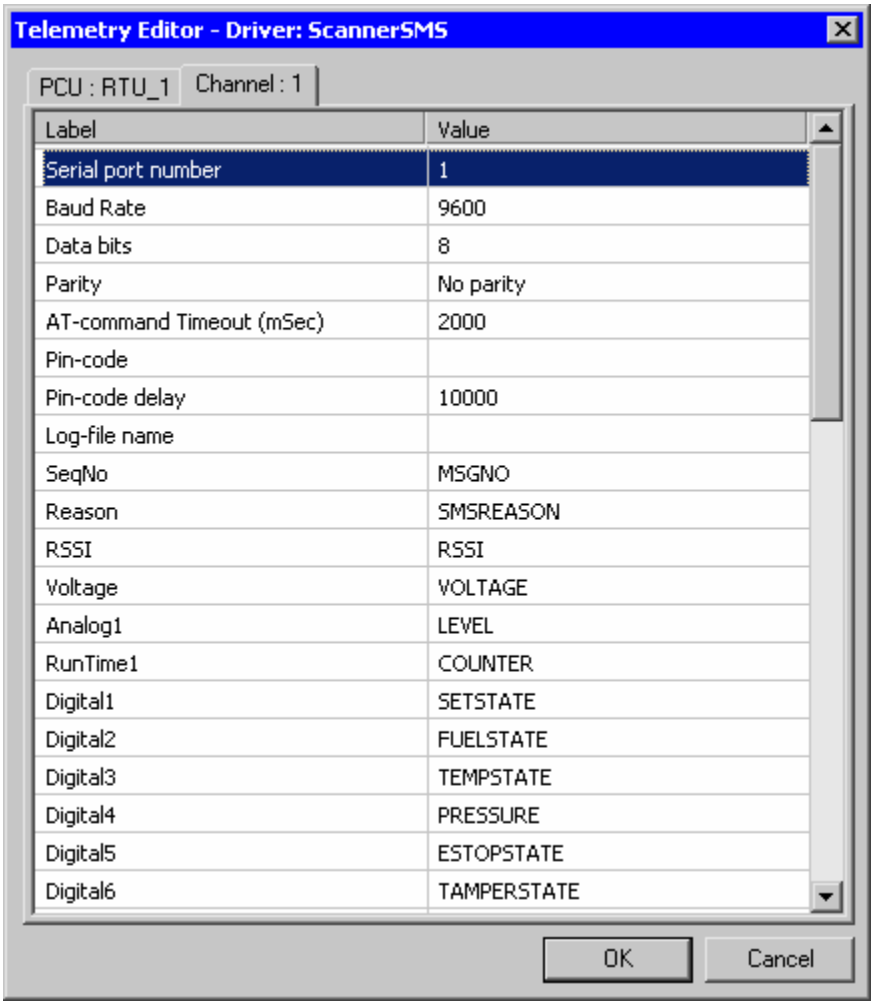
   If no Error Logs appear, the "Telemetry Editor - Driver: [scanner name]" window, "PCU: [PCU name]" tab will be displayed:



4. For the PCU, edit the "Value" fields for each "Label" as required.

   Labels and their default values are as defined in the "[scanner name].pcu.cfg" file provided by the scanner developer.

5. Click on the "Channel: [channel number]" tab:



6. For the Channel, edit the "Value" fields for each "Label" as required. Use the scroll bar if required Label is not visible.

   Labels and their default values are as defined in the "[scanner name].cfg" file provided by the scanner developer.

   When you select a "Value" field, the field will become active allowing you to edit the value using one of the following editing modes:

   edit the value by overwriting existing value.

   highlight the existing value and type in the new value, or use the spinner buttons to change the value.

   click on the button and select required value from the drop-down list.

7. After editing required values, click on the **OK** button to save the PCU communication settings, or click on the **Cancel** button to abort the operation.

   On selecting **OK**, an "Operation In Progress" window will appear while Flex.View makes contact with the RealFlex server to update the channels description file, driver configuration file and channel driver setting information.

3.5 Database Point Definitions

3.5.1 To Add, Delete and Edit Tags

Adding or deleting Tags can only be carried out by Flex.View users with a Development licence and appropriate user-level access.

➔ **To add a scan point for a particular PCU:**

Note: Access to the Database Editor may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

1. From the **Configuration** menu, select the **Database Editor** option. The "Database Editor - List of project PCU:" window will appear listing all PCU's on the system.

2. Double-click on the PCU for which you want to add scan points. The "Database Editor - Tags for (*PCU name)* PCU:" window will appear listing all currently defined tags for the selected PCU.

3. On the "Tag editing" toolbar, click on required button. Choices are:

Add Analog

Add Meter

Add Status

Add Tank

A blank "Add Point" window for the data type selected will be displayed. **Note:** The "Add Point" windows are identical to the "Tag Properties" windows.

Once relevant fields have been defined, the scan point may be written to the RealFlex database by clicking on the button in the top of the "Add Point" window.

➔ **To delete scan points for a particular PCU:**

Scan points can be deleted from the RealFlex database while viewing the points in the "Database Editor - Tags for (*PCU name)* PCU:" window.

1. From the **Configuration** menu, select the **Database Editor** option. The "Database Editor - List of project PCU:" window will appear listing all PCU's on the system.

2. Double-click on the PCU for which you want to edit scan points. The "Database Editor - Tags for (*PCU name)* PCU:" window will appear listing all currently defined tags for the selected PCU.

3. Select required tag(s) to be removed.

   To select a single tag, click on and highlight the tag.

   To select a group of tags that are next to each other, click on and highlight the first tag of the group, hold down the **Shift** key then scroll down the list and select the last tag of the group.

   To select individual tags which are not next to each other, hold down the **Ctrl** key, then select each tag as required.

4. After you have selected the tags to be deleted, click on the button. You will be prompted to confirm the deletion of the scan point(s) with a "Yes/No" selection.

   After selecting **Yes**, the selected scan point(s) will be deleted from the database.

➔ **To edit a scan point for a particular PCU:**

1. From the **Configuration** menu, select the **Database Editor** option. The "Database Editor - List of project PCU:" window will appear listing all PCU's on the system.

2. Double-click on the PCU for which you want to add scan points. The "Database Editor - Tags for (*PCU name)* PCU:" window will appear listing all currently defined tags for the selected PCU.

3. Click on and highlight required tag to be edited, then click on the button. The "Tag Properties" window will appear for the selected tag.

4. Edit relevant fields as required. The edited scan point may be written to the RealFlex database by clicking on the button in the top of the "Tag Properties" window.

The "Tag Properties" window may also be accessed for editing via the "Edit Database" option of the "Dynamic Display Control - Poke Points" menu. For details, please refer to Section 2.3.1.6. Tag properties can only be edited by Flex.View users with appropriate user-level access.

3.5.2 Analog Point Definition

3.5.2.1 Analog Tag properties

Adding or deleting Tags can only be carried out by Flex.View users with a Development licence and appropriate user-level access.

The Analog "Tag Properties" window is used to provide RealFlex with the information it needs to monitor and display analog scan points. Analog scan points are those that can assume real number values over some defined range. Alarm levels and alarm actions may also be defined for each analog point, as well as the colors for displaying the point when alarm limits are violated.

➔ **To access the Analog Tag properties window:**

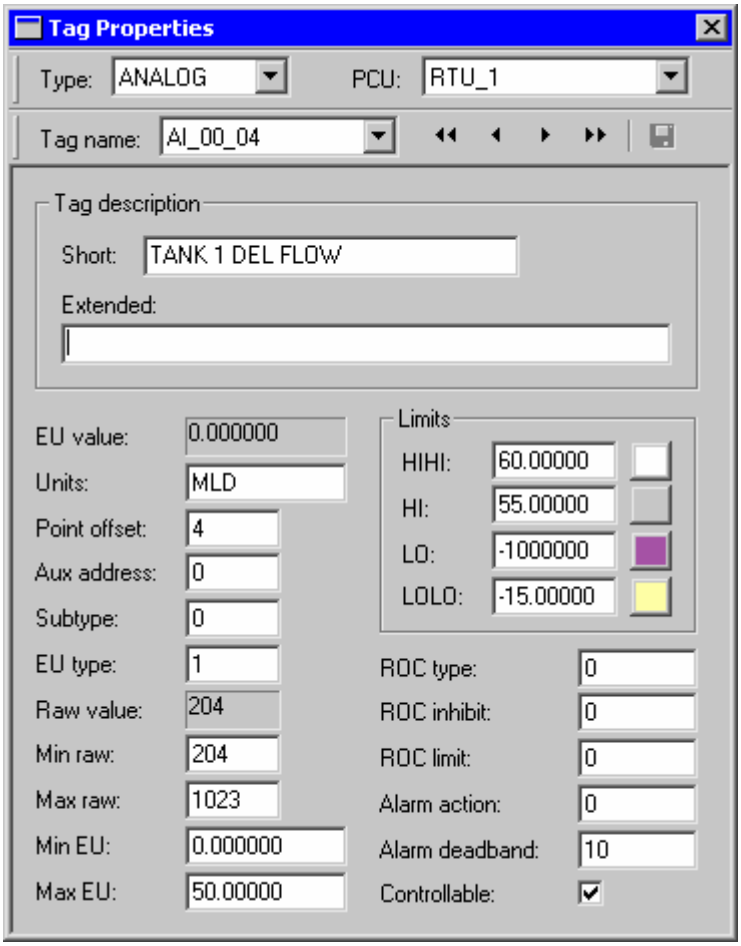
Note: Access to the Database Editor may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

1. From the **Configuration** menu, select the **Database Editor** option. The "Database Editor - List of project PCU:" window is displayed listing all PCU's on the system.

2. From the "Database Editor - List of project PCU:" window, double click on the required PCU. The "Database Editor - Tags for (*PCU name)* PCU:" window will appear listing all currently defined tags for the selected PCU.

3. From the "Database Editor - Tags for (*PCU name)* PCU:" window, either double click on the required analog point, or click on and highlight required analog point, then click on the button.

   The "Tag Properties" window will appear:



4. When adding a new Tag, enter a Tag name, Tag description and values for each parameter as required. When editing an existing Tag, edit fields as required by overwriting the existing value for each parameter.

The "Tag Properties" window may also be accessed for editing via the "Edit Database" option of the "Dynamic Display Control - Poke Points" menu. Tag properties can only be edited by Flex.View users with appropriate user-level access.

The significance of each field in the display is:

Tag description - Twenty character (Short) and forty five character (Extended), free format description of the analog point. Point descriptions may be entered in capital or lower case letters.

EU value - Current value of scanned analog point. This field cannot be edited from this screen, it is only provided for informational purposes.

Units - Ten character units-of-measure, which describe the analog point in terms such as, DegF, PSI, Lbs/hour, etc. Unit descriptions may be entered in capital or lower case letters.

Point offset - The value in this field tells the I/O driver which item of data received from the PLC/RTU is to be placed in this record. Because the precise requirements depend upon the particular I/O driver used to access the data for this point, a general description of how to determine the "point offset" is not possible. If this is a "pseudopoint" (an unscanned point) then "-1" is entered in this field to tell the I/O driver to ignore this datapoint. A "-2" value represents an output only value and is only updated when a control is issued for that database point. Refer to I/O driver documentation and applicable data sheet for your hardware.

Aux address - This field is used for additional addressing or codes that may be required for some PLCs/RTUs. Refer to I/O driver documentation and applicable data sheet for your hardware.

Subtype - This field is used for additional addressing or codes that may be required for some PLCs/RTUs. Refer to I/O driver documentation and applicable data sheet for your hardware.

EU type - Engineering units (EU) conversion type:

0 = No Conversion Required
1 = Linear Extrapolation
General: y = ax + b
RealFlex: E=((Emax-Emin)/(Rmax-Rmin))*(R-Rmin)+Emin
where:
"E" is the engineering unit value, and "R" is the raw value (input)
2 = Square root extrapolation
General: y2 = ax
RealFlex:

$$E = \sqrt{\frac{R - Rmin}{Rmax - Rmin}} * (Emax - Emin) + Emin$$

99 = Internal pseudopoint.

Other - 0,1,2, and 99 are generally applicable; however, other values are required by specific I/O drivers, under certain circumstances. Please consult your I/O Driver documentation for further details.

Raw value - The raw count value accepted from the field device. Decimal value (-32768 -> 32767).

Min raw - Minimum valid raw count value accepted from the field device. Decimal value (-32768 -> 32767). Not applicable for EU TYPE = 0, 10, 20,30... or 99. For example, if 16-bit positive values are passed, this value would typically be 0.

Max raw - Maximum valid raw count value accepted from the field device. Decimal value (-32768 -> 32767). Not applicable for EU TYPE = 0, 10 or 99. For example, if 12-bit positive values are passed, this value would typically be 4095.

Min EU - Minimum engineering units value for point range (bias) or low end value of instrument range. Decimal value (-999999.0 -> 9999999.0) Value used for EU conversion, instrument under range alarming and TREND/PID/BAR GRAPH EU data scale. This value is defined for controls or manual overwrites to be available for the point. Please note: If EU type = 0 and MIN/MAX EU values = 0, analog instrument failure checking is disabled. EU Type cannot be left at "0" if the point is used in a Trend dynamic display or if the point is defined as controllable, (This value, in engineering units, corresponds to the MIN RAW value in counts).

Max EU - Maximum engineering units value for point range (scale) or high end value of instrument range. Decimal value (-999999.0 -> 9999999.0) Value used for EU conversion, instrument under range alarming and TREND/PID/BAR GRAPH EU data scale. This value is defined for controls or manual overwrites to be available for the point. Please note: If EU type = 0 and MIN/MAX EU values = 0, analog instrument failure checking is disabled. EU Type cannot be left at "0" if the point is used in a Trend dynamic display or if the point is defined as controllable, (This value, in engineering units, corresponds to the MAX RAW value in counts).

ROC type - Define "rate-of-change" (ROC) processing as follows:

0 = ROC alarm processing is DISABLED
1 = ROC alarming based on "inter-scan" delta change in conjunction with ROC LIMIT and ROC INHIBIT parameters.

ROC inhibit - Decimal value (max = 255) specifying time interval in seconds during which rate of change (ROC) processing will be disabled after posting an initial ROC alarm for the referenced analog data point.

ROC limit - The decimal value in engineering units specifying the amount which a database point must increase or decrease by in order for a rate of change alarm to be posted.

Alarm action - Decimal number (0-3, 5-255) which identifies the Action Processor data file record(s) defining a digital output control to be issued automatically upon this analog's value violating an alarm limit. (0 indicates "no action".) An entry in the Alarm Action field requires a file written for use with the Action Processor. The Action Processor is a RealFlex task designed to automatically respond to changes in state of status points and out-of-limits alarm conditions in analog points.

Alarm deadband - Used for analog points that have a tendency to repeatedly violate one of the defined alarm limits. The deadband value is specified as a percentage of the total EU range. The Alarm Deadband maximum value is 255 (i.e. 25.5% of the total EU range).

Example:
EU range 0-100
HLM=90
Alarm Deadband = 100 or 10% of total EU Range
Value rises to 95 and an alarm is generated
Value drops to 85 and no Return to Normal is generated
Value rises to 97 and no alarm is generated
Value drops to 79.9 and a Return to Normal alarm is generated
Value rises to 95 and an alarm is generated
or
EU range 0-100
LLM = 20
Alarm Deadband=100 or 10% of total EU range
Value falls to 15 and an alarm is generated
Value rises to 25 and no Return to Normal is generated
Value falls to 10 and no alarm is generated
Value rises to 30.1 and a Return to Normal alarm is generated
Value falls to 18 and another alarm is generated

Controllable - The user can left click on the analog value on the System Summary window or any display showing this analog and set a new value for this analog, i.e., it becomes an analog control.

In the Limits section of the window:

HIHI - Decimal value (-999999.0 -> 9999999.0) in "engineering units" which represents a "high-high" alarm limit for the referenced analog data point. When the actual value reaches or exceeds the high-high limit value set for this point, the point will go into alarm.

HI - Decimal value (-999999.0 -> 9999999.0) in "engineering units" which represents a "high" alarm limit for the referenced analog data point. When the actual value reaches or exceeds the high limit value set for this point, the point will go into alarm.

LO - Decimal value (-999999.0 -> 9999999.0) in "engineering units" which represents a "low" alarm limit for the referenced analog data point. When the actual value reaches or falls below the low limit value set for this point, the point will go into alarm.

LOLO - Decimal value (-999999.0 -> 9999999.0) in "engineering units" which represents a "low-low" alarm limit for the referenced analog data point. When the actual value reaches or falls below the low-low limit value set for this point, the point will go into alarm.

The color boxes next to each field in the Limits section shows the color that will be displayed in alarm messages and dynamic value and/or bar graph representations of the referenced analog when the alarm condition is detected. Change colors by left clicking on the color box and selecting required color from the pop-up list.

Note: The default color (Black) will specify NO ALARM and will disable alarm limit checking. If an alarm limit is defined, a color must be chosen other than "Black".

5. When you have completed all your entries or changes, click on the button in the top of the window to save your changes.

   A "Database Modification" dialog box will appear displaying the progress for the addition/modification of the Tag in the RealFlex database.

3.5.3 Meter Point Definition

3.5.3.1 Meter Tag properties

Adding or deleting Tags can only be carried out by Flex.View users with a Development licence and appropriate user-level access.

The Meter "Tag properties" window is used to provide RealFlex with the information it needs to monitor and display meter or accumulator scan points. Meter points listed on this window are described by tag name, description, units, meter type, meter factor, pulses/unit, rollover, and current value.

➔ **To access the Meter Tag properties window:**

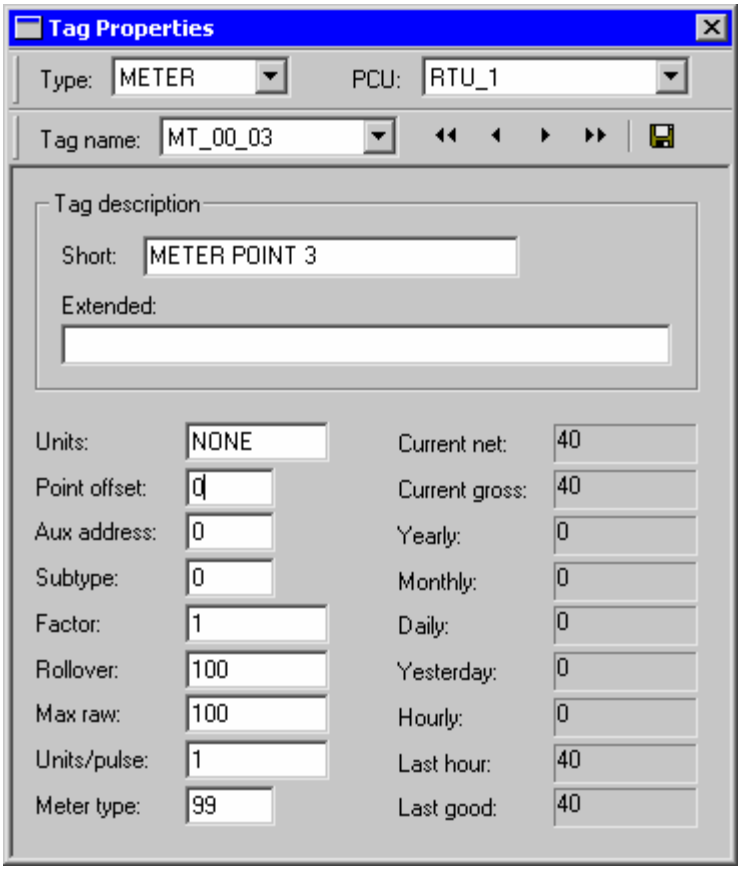
Note: Access to the Database Editor may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

1. From the **Configuration** menu, select the **Database Editor** option. The "Database Editor - List of project PCU:" window is displayed listing all PCU's on the system.

2. From the "Database Editor - List of project PCU:" window, double click on the required PCU. The "Database Editor - Tags for (*PCU name)* PCU:" window will appear listing all currently defined tags for the selected PCU.

3. From the "Database Editor - Tags for (*PCU name)* PCU:" window, either double click on the required meter point, or click on and highlight required meter point, then click on the button.

   The "Tag Properties" window will appear:



4. When adding a new Tag, enter a Tag name, Tag description and values for each parameter as required. When editing an existing Tag, edit fields as required by overwriting the existing value for each parameter.

The "Tag Properties" window may also be accessed for editing via the "Edit Database" option of the "Dynamic Display Control - Poke Points" menu. Tag properties can only be edited by Flex.View users with appropriate user-level access.

The significance of each field in the display is:

Tag description - Twenty character (Short) and forty five character (Extended), free format description of the meter point. Point descriptions may be entered in capital or lower case letters.

Units - Ten character units-of-measure description for the value being accumulated, e.g., BBL, M3, GAL, etc. Accepts both capital and lower case letters.

Point offset - The value in this field tells the I/O driver which item of data received from the PCU is to be placed in this record. Because the precise requirements depend upon the particular I/O driver used to access the data for this point, a general description of how to determine the "point offset" is not possible. If this is a "pseudopoint" (an unscanned point) then "-1" is entered in this field to tell the I/O driver to ignore this datapoint. A "-2" value represents an output only value and is only updated when a control is issued for that database point. Refer to I/O driver documentation and applicable hardware data sheet.

Aux address - This field is used for additional addressing or codes that may be required for some PLCs/RTUs. Refer to I/O driver documentation and hardware data sheet.

Subtype - This field is used for additional addressing or codes that may be required for some PLCs/RTUs. Refer to I/O driver documentation and hardware data sheet.

Factor - Decimal value (0.0001 -> 99.9999) representing an adjustment factor (for pressure and temperature compensation, etc.) which is applied to either the "inter-scan" delta change value or to the actual PLC/RTU counts, depending upon the Meter type.

Rollover - The highest value attainable for RealFlex internal accumulation given the FACTOR and UNITS/PULSE. Max value is 999999999. The rollover value is independent of the raw meter counts returned by the PLC/RTU.

Max raw - A decimal value (max = 999999999) that is the largest value (+1) that RealFlex will receive from the field device without setting an instrument failure flag.

Units/pulse - Decimal value (0.1 -> 9999999.9) which represents the quantity of product that must flow through the totalizing device before one count is added to either the total raw counts or the inter-scan delta, depending on Meter type.

Meter type - Meter processing type.

> ***Type 0:*** The value received from the device in the field is to be stored directly in the CURRENT GROSS field. The raw value will then be multiplied by the specified FACTOR and UNITS/PULSE, and the result placed in the CURRENT NET field. The YEARLY, MONTHLY, DAILY, HOURLY, and LAST HOUR files are calculated by subtracting the current device reading from the previous device reading, and multiplying by FACTOR and UNITS/PULSE before being placed in these fields. A type 0 meter will recount for Current Net (start from zero) when the value goes to zero in the field. (A field determined rollover)
>
> ***Type 1:*** Calculates a delta value by subtracting the previous value from the field device from the current value. This value will then be added to the CURRENT GROSS field. The delta value will then be multiplied by the FACTOR and UNITS/PULSE and added to the CURRENT NET, YEARLY, MONTHLY, DAILY, HOURLY, and LAST HOUR fields. A type 1 meter will not reset the Current Net field to zero until the Rollover value specified in the database is reached. This Rollover value does not have to match the value specified in the field device, (A software defined rollover).
>
> ***Type 4:*** The value received from the field is added to the CURRENT GROSS field. This reading is multiplied by FACTOR and UNITS/PULSE and then added to the CURRENT NET field.
>
> ***Type 5:*** Utilizes American Petroleum Institute processing. See Section 3.5.3.2.
>
> ***Type 6:*** The value read from the field is treated as a delta value. If the new field value is greater than the rollover, then the new value is treated as the delta. The difference between the last good value and the rollover is ignored in this meter type. For example, if the rollover value is 1000 and the LAST GOOD is 900, when a current value of 100 is read in from the remote device, the delta value added is 100, not 200. The HOURLY, DAILY, MONTHLY and YEARLY fields are also maintained. MAX RAW is not applicable when meter type 6 is used.
>
> ***Type 99:*** An internal pseudopoint. This meter type does not maintain the HOURLY, DAILY, MONTHLY and YEARLY data fields. Only the LAST GOOD and CURRENT GROSS are updated.

Note: The following fields cannot be edited from this window, they are only provided for information purposes:

Current net - Total accumulated net (See description of Meter type above).

Current gross - Value for internal accumulator register. Not necessarily the same as the hard meter reading. (See description of Meter type above).

Yearly - Year-to-date accumulation, (Similar to Current net, but cleared yearly).

Monthly - Month-to-date accumulation, (Similar to Current net, but cleared monthly).

Daily - Today's current accumulation, (Similar to Current net, but cleared daily).

Yesterday - Yesterday's accumulation.

Hourly - This hour's current accumulation. (Similar to Current net, but cleared hourly).

Last hour - Last hour's accumulation.

Last good - Last valid raw meter reading.

5. When you have completed all your entries or changes, click on the button in the top of the window to save your changes.

   A "Database Modification" dialog box will appear displaying the progress for the addition/modification of the Tag in the RealFlex database.

3.5.3.2 API volume corrections for meters

Processing of meter data with METER TYPE = 5 is similar to processing for those with METER TYPE = 1, except that API volume correction calculations are applied. This works as follows: When a reading from a PLC/RTU is received for a type 5 meter, the previous reading (from the LAST GOOD field) is subtracted from the new reading to determine the "delta". Then the calculation specified in file **/realflex/data/mtrtbl** for the specific datapoint is used to determine the factor to be applied to the delta. This factor is placed in the FACTOR database field in the Database Editor, then processing continues as though the datapoint were a Type 1 meter point. In other words, the values in the CURRENT NET, YEARLY, MONTHLY, DAILY, YESTERDAY, HOURLY, and LAST HOUR fields are all corrected values, and the values in the CURRENT GROSS and LAST GOOD fields are raw values.

Every Type 5 meter point must have a separate record in the **mtrtbl** file (located in subdirectory **/realflex/data/api**) to specify how its correction factor is to be calculated. The different types of calculations and the records required to produce them are described below. Each record consists of a number of elements. The file must be built according to the following rules:

1. Each record element is entered on a separate line.
2. Each record element begins in column one.
3. No blank lines are allowed within a record.
4. No blank lines are allowed at the beginning of the table.
5. To enhance readability, lines may be separated using a semi-colon (;).
6. All database points for each **mtrtbl** record must be located in the same PCU.
7. The tag names should be entered in upper case letters.

Each **mtrtbl** entry specifies the numerical data and associated database fields needed to perform the calculation, and each record also specifies one of the calculation types described below:

(1) Temperature-Compensated Meters with one to four products' meter factors (MFs) — MF selected according to product type and flow rate.

MF = f(product,flow rate)

Net = Gross * MF

For this subtype, each product has a meter factor for high flow rate and another for low flow rate. In addition to creating an entry for each meter in the **mtrtbl** file, the system implementor needs to enter in the Database Editor the meter factors into unscanned analog database points (analog pseudopoints), and create a status database point to hold the product type. The product type can be entered during realtime, in which case the status point should be unscanned (a status pseudopoint), or it can be received from the field (scanned) if your hardware supports this feature.

The **mtrtbl** record structure for calculation Type 1 is as follows:

Meter_tag	Database Editor point name tag
RTU_tag	Database Editor PCU name tag
Calculation type	1
Flow Rate Switch	The flow rate at which the processor switches from the low flow rate factor to the high flow rate factor.
Flow_Rate_tag	The tag name of the analog database point in which the current flow rate for the meter is stored.
Product_type_tag	The tag name of the status database point that will hold the product type designators (corresponding to status values 0-3).
No. of Meter Factors	2, 4, 6, or 8
Lo_Rate_1_MF_tag	Tag name of analog point containing low- flow-rate Meter Factor for product 1 (status 0).
Lo_Rate_1_MF_tag	Tag name for low-flow-rate MF for prod. 1 (status 0).
Lo_Rate_2_MF_tag	Tag name for low-flow-rate MF for prod. 2 (status 1).
Lo_Rate_3_MF_tag	Tag name for low-flow-rate MF for prod. 3 (status 2).
Lo_Rate_4_MF_tag	Tag name for low-flow-rate MF for prod. 4 (status 3).
Hi_Rate_1_MF_tag	Tag name for high-flow-rate MF for prod. 1 (status 0),
Hi_Rate_2_MF_tag	Tag name for high-flow-rate MF for prod. 2 (status 1)
Hi_Rate_3_MF_tag	Tag name for high-flow-rate MF for prod. 3 (status 2)
Hi_Rate_4_MF_tag	Tag name for high-flow-rate MF for prod. 4 (status 3)

Sample **mtrtbl** entry for a meter using calculation Type 1:

```
P1_P2_TOTAL
RTU_CTRL_16
1
475.0
MTR_FLW_RAT
PROD_TYPE
4
MF_PROD1_LO
MF_PROD2_LO
MF_PROD1_HI
MF_PROD2_HI
```

(2) Temperature-Compensated Meters with two meter factors - MF selected according to product type as identified via a status database point.

MF = f(product)

Net = Gross * MF

For this subtype, the meter factor is a function of product type only. Each product has a different meter factor. The system implementor enters the meter factor by hand into unscanned analog database points (pseudopoints), and creates a status database point to hold the product type. (The product type can be entered by hand during realtime, in which case the status point should be unscanned, or it can be received from the field if your hardware is so designed). The meter factor selected by the data processing is multiplied by the gross barrels to get net barrels.

The **mtrtbl** record structure for calculation Type 2 is as follows:

Meter_tag	Database point name tag.
RTU_tag	Database RTU name tag.
Calculation type	2.
Product_tag	Tag name of status point containing ID of current product (status = 0-1).
State_0_MF_tag	Tag name of analog point containing MF for Product 1 (Status 0).
State_1_MF_tag	Tag name of analog point containing MF for Product 2 (Status 1).

Sample mtrtbl entry for a meter using calculation Type 2:

```
METER_4
FIELD_3_RTU
2
MIX_BUT_RMF
12_NGAS_RMF
```

(3) Temperature-Compensated Meters with two meter factors — MF selected according to product type, on the basis of a scanned densitometer reading.

MF = f(product)

Net = Gross * MF

For this subtype, the meter factor is a function of product density only. Each product has a different meter factor. The system implementor enters the meter factors by hand into unscanned analog database points (pseudopoints), and creates an analog database point to hold the densitometer reading. A density "switch point" is specified (in the **mtrtbl** file) to differentiate between the two products. The meter factor selected by the data processing is multiplied by the gross barrels to get net barrels.

The **mtrtbl** record structure for calculation Type 3 is as follows:

Meter_tag	Database point name tag.
RTU_tag	Database RTU name tag.
Calculation type	3.
Density switch constant	The density at which the processor switches from the lower density product's meter factor to the higher density product’s meter factor.
Product_density_tag	The tag name of the analog database point containing the current product's density.
Lo_density_MF_tag	The tag name of the analog database point containing the lower density product's meter factor.
Hi_density_MF_tag	The tag name of the analog database point containing the higher density product's meter factor.

Sample **mtrtbl** entry for a meter using calculation Type 3:

```
METER_5
STATION_7
3
.6225 MTR5_DENSITY
MF_MIX_BUTN
MF_12_NGAS
```

(4) Non-temperature-compensated Meters with one meter factor and a temperature compensation factor (CTL).

Net = Gross * MF * CTL

(a) Variation 1 - using API subroutines TAB5B and TAB6B

The system implementor manually enters the meter factor into an analog pseudopoint and creates scanned analog points for the product gravity and temperature. The CTL is calculated by using a corrected gravity and the scanned product temperature as inputs to API subroutine TAB6B (identified for this calculation type as subroutine 2). (The corrected gravity is calculated from the observed gravity and temperature of the product by API subroutine TAB5B.)

The **mtrtbl** record structure for calculation Type 4, variation 1, is as follows:

Meter_tag	Database point name tag.
RTU_tag	Database RTU name tag.
Calculation type	4.
Meter_factor_tag	The tag name of the analog database point containing the product's meter factor tag (analog).
API Subrutine No.	2.
Gravity_tag	The tag name of the analog database point containing the product's API Corrected Gravity.
Temperature_tag	The tag name of the analog database point containing the product’s observed temperature.

Sample **mtrtbl** entry for a meter using calculation Type 4, variation 1:

```
12_NAT_GAS
HTF_CRUDE
4
12_NGAS_MF
2
311_C_GRVTY
12_NGAS_TEMP
```

(b) Variation 2 - using GPA Technical Publication 16 subroutine.

The system implementor manually enters the meter factor into an analog pseudopoint and creates a scanned analog point for the product temperature. The CTL is calculated from a relative density constant for the product (found in the **mtrtbl** entry) and the scanned analog product temperature, by a Gas Processors Association (GPA) subroutine. The subroutine, which is described in GPA Technical Publication 16, has been modified to only do a TABLE 24 temperature correction, based on relative density and temperature. No vapor pressure correction is done at this time, but the structure of the **mtrtbl** is designed to include vapor pressure, to allow for future expansion.

The **mtrtbl** record structure for calculation Type 4 is as follows:

Meter_tag	Database point name tag.
RTU_tag	Database RTU name tag.
Calculation type	4.
Meter_factor_tag	The tag name of the analog database point containing the product's meter factor.

Continued on next page

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API Subroutine No.	3
Density constant	Floating point product density constant.
Product_temperature_tag	The tag name of the analog database point containing the product's observed temperature.

Vapor Pressure constant Floating point product vapor pressure constant - this entry is ignored.

Sample **mtrtbl** entry for a meter using calculation type 4, variation 2:

```
MIX_TOTAL
HTF_BUTANE
4
MIX_BUTN_MF
3
.575
MIX_TEMP
0.0
```

(5) Non-Temperature-Compensated Meters with two meter factors and a temperature compensation factor.

MF = f(product)

Net = Gross * MF * CTL

(a) Variation 1 - using API subroutines TAB5B and TAB6B.

The product type is specified by a status value. The data processor selects the meter factor based on this product status. The corrected gravity output from the API TAB5B subroutine and the scanned analog product temperature are used as inputs to API subroutine TAB6B which calculates the CTL. The gross barrels are multiplied by the CTL and meter factor. The mtrtbl record structure for calculation type 5, variation 1, is as follows:

Meter_tag	Database point name tag.
RTU_tag	Database RTU name tag.
Calculation type	5.
Product_type_tag	The tag name of the status database point containing the product type.
MF_Product1_tag	The tag name of the analog database point containing the Product 1 meter factor.
MF_Product2_tag	The tag name of the analog database point containing the Product 2 meter factor.
API Subroutine	ASCII characters ‘TAB6B’.
Gravity_tag	The tag name of the analog database point containing the product's specific gravity.
Temperature_tag	The tag name of the analog database point containing the product's observed temperature.

Sample **mtrtbl** entry for calculation Type 5, variation 1:

```
12_total
GULF_PLAINS
5
12_PROD_TYPE
12_NGAS_CMF
12_NGAS_SMF
TAB6B
311_C_GRVTY
12_NAT_TEMP
```

(b) Variation 2 - using GPA Technical Publication 16 subroutine.

The system implementor manually enters the two meter factors into analog pseudopoints and creates a status database point for the product status, as well as a scanned analog database point for the product temperature. The product status (i.e., its identity) is either manually entered during realtime, or scanned in, depending on the system I/O devices. The data processor selects the meter factor based on the product status. The CTL is calculated from a relative density constant (found in the **mtrtbl** entry) for the product and the scanned analog product temperature, by a Gas Processors Association (GPA) subroutine. The subroutine, which is described in GPA Technical Publication 16, has been modified to only do a TABLE 24 temperature correction based on relative density and temperature. No vapor pressure correction is done at this time, but the structure of the **mtrtbl** is designed to include vapor pressure, to allow for future expansion.

The **mtrtbl** record structure for calculation type 5, variation 2 is as follows:

Meter_tag	Database point name tag.
RTU_tag	Database RTU name tag.
Calculation type	5.
Product_type_tag	The tag name of the status database point containing the product type.
MF_Product1_tag	The tag name of the analog database point containing the meter factor for product 1 (status 0).
MF_Product2_tag	The tag name of the analog database point containing the meter factor for product 2 (status 1).
API Subroutine	ASCII characters ‘TP16’ (GSA Tech. Pub. 16).
Product density constant	Floating point number (relative density).
Product_temperature_tag	The tag name of the analog database point containing the product temperature.
Product vapor pressure	Floating point number - this entry is ignored.

Sample **mtrtbl** entry for calculation Type 5, variation 2:

```
PRPANE_TOT
GULF_PLAINS
5
METER_PRODUCT
PROPANE_CMF
PROPANE_SMF
TP16
.501
PROPANE_TEMP
0.0
```

3.5.4 Status Point Definition

3.5.4.1 Status Tag properties

Adding or deleting Tags can only be carried out by Flex.View users with a Development licence and appropriate user-level access.

The Status "Tag Properties" window is used to provide RealFlex with the information it needs to monitor and display status (digital input/output) scan points. Status scan points typically represent two or four state indicators; e.g., on/off, run/stop, invalid/open/closed/travel, etc. Alarm states and alarm actions may also be defined for each status point, as well as the colors and textual descriptions for displaying the point for each condition.

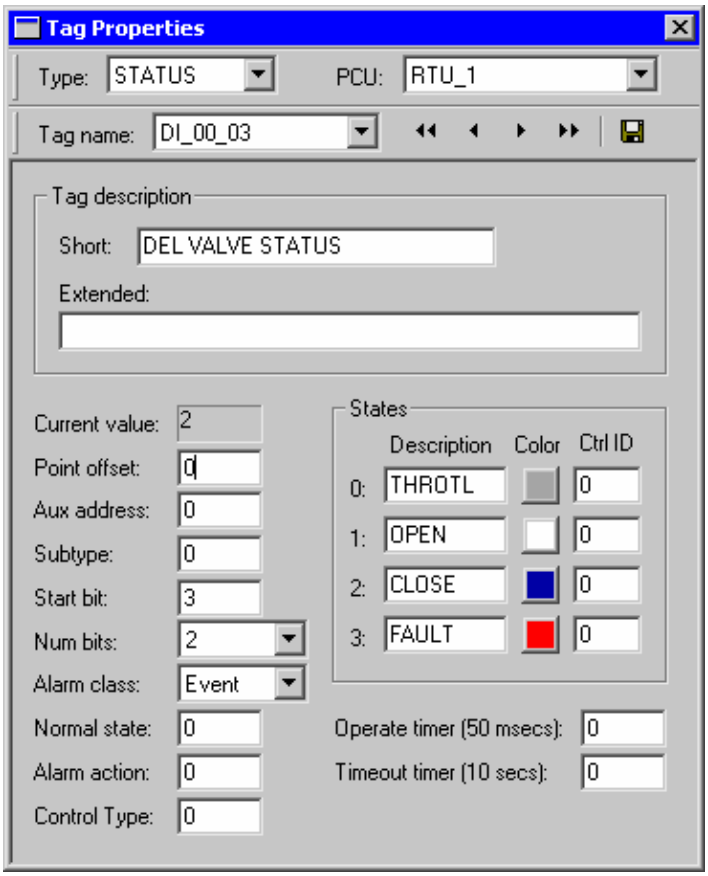
➔ **To access the Status Tag properties window:**

Note: Access to the Database Editor may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

1. From the **Configuration** menu, select the **Database Editor** option. The "Database Editor - List of project PCU:" window is displayed listing all PCU's on the system.

2. From the "Database Editor - List of project PCU:" window, double click on the required PCU. The "Database Editor - Tags for (*PCU name)* PCU:" window will appear listing all currently defined tags for the selected PCU.

3. From the "Database Editor - Tags for (*PCU name)* PCU:" window, either double click on the required status point, or click on and highlight required status point, then click on the button. The "Tag Properties" window will appear:



4. When adding a new Tag, enter a Tag name, Tag description and values for each parameter as required. When editing an existing Tag, edit fields as required by overwriting the existing value for each parameter.

The "Tag Properties" window may also be accessed for editing via the "Edit Database" option of the "Dynamic Display Control - Poke Points" menu. Tag properties can only be edited by Flex.View users with appropriate user-level access.

The significance of each field in the display is:

Tag description - Twenty character (Short) and forty five character (Extended), free format description of the status point. Point descriptions may be entered in capital or lower case letters.

Current value - Current value of the scanned status point. This field cannot be edited from this window, it is only provided for information purposes.

Point offset - The value in this field tells the I/O driver which item of data received from the PLC/RTU is to be placed in this record. Because the precise requirements depend upon the particular I/O driver used to access the data for this point, a general description of how to determine the "point offset" is not possible. If this is a "pseudopoint" (an unscanned point) then "-1" is entered in this field to tell the I/O driver to ignore this datapoint. A "-2" value represents an output only value and is only updated when a control is issued for that database point. Refer to I/O driver documentation and applicable data sheet for your hardware.

Aux address - This field is used for additional addressing or codes that may be required for some PLCs/RTUs. Refer to I/O driver documentation and applicable data sheet for your hardware.

Subtype - This field is used for additional addressing or codes that may be required for some PLCs /RTUs. Refer to I/O driver documentation and applicable data sheet for your hardware.

Start bit - First significant bit in the status word for point being defined. Definition is highly dependent upon the specific I/O Driver in use. Please consult the I/O Driver documentation for appropriate details. Status bits are numbered right to left, beginning with zero and ending with 15; e.g., if the second two bits (2 & 3) represent a 2-bit valve status scan point, designate the start bit as "2". Refer to I/O driver documentation and applicable data sheet for your hardware.

Num bits - Number of bits comprising the status point (1 bit for two-state point or 2 bits for four-state point). Refer to I/O driver documentation and applicable data sheet for your hardware.

Alarm class - Classification of alarm for the status point: Critical, Urgent, Alarm, Event, or No Alarm. The Alarm Class may be chosen by left clicking on the Alarm Class field or drop-down arrow and selecting the desired alarm from the list. **Note:** specifying a type "No alarm" will disable alarm generation on this point.

Normal state - Normal state value of status point; i.e., 0 or 1 for 1-bit status; 0, 1, 2, or 3 for 2-bit status. A normal state of "0" will define the first state listed in the "States Description" field as the "Normal" state. When a status point attains this condition, a "return-to-normal" is assumed and any associated alarms will be removed from the active alarm list and replaced with a "return-to-normal" message. This is also the state that a status point is set to when RealFlex is shutdown and restarted with the "warmstart" option.

Alarm action - Decimal number (0-3, 5-255) which identifies the Action Processor data file record(s) defining a status output control to be issued automatically upon this status point's attainment of a predefined state. (0 indicates no action.) An entry in the "Alarm action" field requires a file written for use with the Action Processor. The Action Processor is a RealFlex utility designed to automatically respond to changes in state of status points and out-of-limits alarm conditions in analog points.

Control type - The information in this field specifies the type of control to pass to the I/O driver. Interpretation of the code depends upon the particular I/O driver being used. (See your I/O Driver manual and applicable data sheet for your hardware.) The following conventions are followed by some I/O Drivers:

0 = Not controllable.
1 = Momentary output, (works with Operate Timer to close the relay based on the value given in the operate timer field).
2 = Latching output, (closes the relay).
11 = Momentary output with no digital input point, (RealFlex does not check for the change).
12 = Latching output with no digital input point, (RealFlex does not check for the change).
99 = Internal pseudopoint.

Operate timer (50 msec) - Represents a value that will be downloaded to a PLC/RTU indicating how long to momentarily latch the corresponding relay. Please consult the appropriate I/O driver data sheet to determine if this function is supported by the I/O driver you are utilizing.

Timeout timer (10 msec) - Number of 10 second intervals to wait for a point to reach the controlled state. If the timer expires without a corresponding status change, the control queue will close and a control time-out alarm is generated.

In the States section:

Description - Six character textual description for each of the states a digital point can assume. Application/Point/Device (PLC/RTU) dependent, e.g.,:

ON/OFF, START/STOP, SET/RESET for 1 bit
ERROR/CLOSED/OPEN/TRAVEL for 2 bit

Color - Color to display alarm/event message and dynamic representations of the referenced status point when it is in the corresponding state.

Ctrl I/D - Represents either the relay number or the control point in the remote unit (1-255). Must be non-zero for control output. (Refer to the I/O driver documentation included with your scanner and applicable data sheet for your hardware.

➔ **To change the color in the "States" section:**

- Click on required button. A pop-up pallet of standard colors will be displayed. Click on the required color. The selected color will now be displayed on the button top.

5. When you have completed all your entries or changes, click on the button in the top of the window to save your changes.

   A "Database Modification" dialog box will appear displaying the progress for the addition/modification of the Tag in the RealFlex database.

3.5.5 Tank Point Definition

3.5.5.1 Tank Tag properties

Adding or deleting Tags can only be carried out by Flex.View users with a Development licence and appropriate user-level access.

The Tank "Tag Properties" window is used to provide RealFlex with the information it needs to monitor and display tank scan points. Tank points listed on this window are described by unique tag name, description, units, conversions, alarms, and current values.

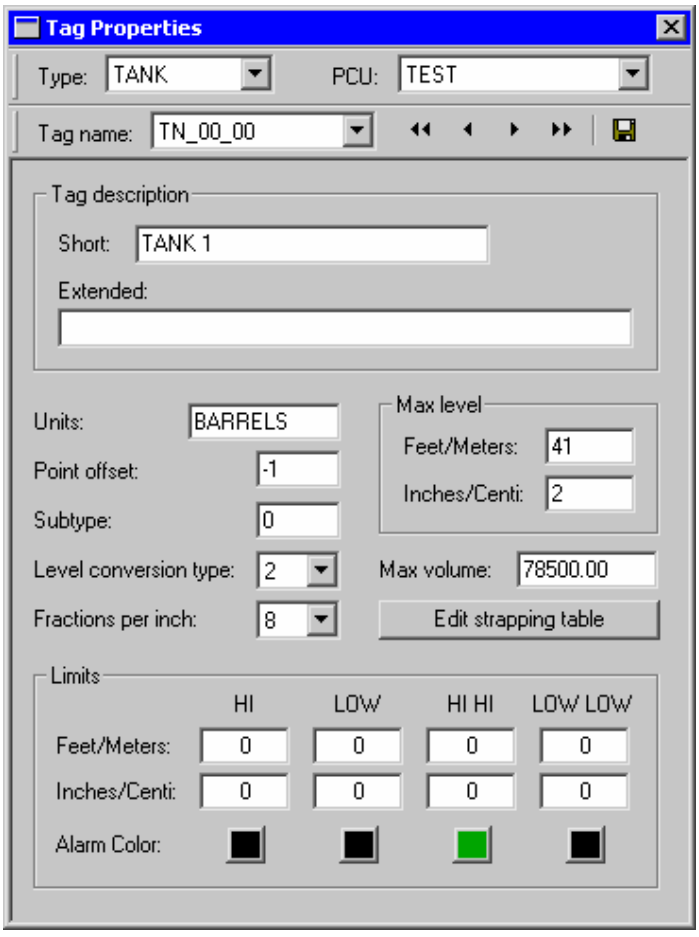
➔ **To access the Tank Tag properties window:**

Note: Access to the Database Editor may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

1. From the **Configuration** menu, select the **Database Editor** option. The "Database Editor - List of project PCU:" window is displayed listing all PCU's on the system.

2. From the "Database Editor - List of project PCU:" window, double click on the required PCU. The "Database Editor - Tags for (*PCU name)* PCU:" window will appear listing all currently defined tags for the selected PCU.

3. From the "Database Editor - Tags for (*PCU name)* PCU:" window, either double click on the required tank point, or click on and highlight required tank point, then click on the button. The "Tag Properties" window will appear:



4. When adding a new Tag, enter a Tag name, Tag description and values for each parameter as required. When editing an existing Tag, edit fields as required by overwriting the existing value for each parameter.

The "Tag Properties" window may also be accessed for editing via the "Edit Database" option of the "Dynamic Display Control - Poke Points" menu. Tag properties can only be edited by Flex.View users with appropriate user-level access.

The significance of each field in the display is:

Tag description - Twenty character (Short) and forty five character (Extended), free format description of the tank point. Point descriptions may be entered in capital or lower case letters.

Units - Ten character units-of-measure, which describes the tank point in terms, such as BBLS, GALS, etc.

Point offset - The value in this field tells the I/O driver which item of data received from the PLC/RTU is to be placed in this record. Because the precise requirements depend upon the particular I/O driver used to access the data, a general description of how to determine the "point offset" is not possible. If this is a "pseudopoint" (an unscanned point) then "-1" is entered in this field to tell the I/O driver to ignore this datapoint. A "-2" value represents an output only value and is only updated when a control is issued for that database point. Refer to I/O driver documentation and applicable hardware data sheet.

Subtype - This field is used for additional addressing or codes that may be required for some PLCs/RTUs. Refer to I/O driver documentation and applicable hardware data sheet.

Level conversion type:

0 = No conversion required.
1 = L & J Tank Gauging interface.
2 = Incremental “Strapping” tables. (English).
3 = Strapping tables with API Volume Corrections. (See Section 3.5.5.3, API volume correction for Tanks).
4 = Incremental "Strapping" tables (Metric).

For level conversion type 2, 3 or 4, refer to Section 3.5.5.2, “Edit/Create Tank Strapping Tables”.

Fractions per inch - If the level conversion type is 2 or 3, indicating strapping tables in English units, then this refers to the precision of the data to be entered in the table. Click on the button and select required option from the list.

The two allowable responses are: **8**, which signifies that a volume is to be entered for every 8th of an inch, and **16**, which signifies that a volume is to be entered for every 16th of an inch.(See Section 3.5.5.2, “Edit/Create Tank Strapping Tables”).

Max volume - Decimal value (max = 9999999) representing the maximal tank product volume.

In the Max level section:

Feet/Meters - Decimal value (max = 99 feet or 32 meters) representing maximal tank product level in "feet" or "meters".

Inches/Centi - Decimal value (max = 11 inches or 99 centimeters) representing the maximal fractional foot/meter portion of the tank product level in "inches/centimeters".

In the Limits section:

HI fields:
Feet/Meters - Decimal value (max = 99 feet or 32 meters) which constitutes a "high" alarm limit for product level in the referenced tank. When the actual value reaches the high limit value set for this point, the point will go into alarm.

Inches/Centi - Decimal value (max = 11 inches or 99 centimeters) which constitutes the fractional foot/meter portion of the "high" alarm limit for product level in the referenced tank. When the actual value reaches the high limit value set for this point, the point will go into alarm.

Alarm Color - Color to display alarm message and dynamic value representation of the referenced tank level when a "high" alarm condition is reported.

LOW fields:
Feet/Meters - Decimal value (max = 99 feet or 32 meters) which constitutes a "low" alarm limit for product level in the tank. When the actual value reaches the low limit value set for this point, the point will go into alarm.

Inches/Centi - Decimal value (max = 11 inches or 99 centimeters) which constitutes the fractional foot/meter portion of the "low" alarm limit for product level in the referenced tank. When the actual value reaches the low limit value set for this point, the point will go into alarm.

Alarm Color - Color to display alarm message and dynamic value representation of the referenced tank level when a "low" alarm condition is reported.

HI HI Fields:
Feet/Meters - Decimal value (max = 99 feet or 32 meters) which constitutes a "high-high" alarm limit for product level in the referenced tank. When the actual value reaches the high-high limit value set for this point, the point will go into alarm.

Inches/Centi - Decimal value (max = 11 inches or 99 centimeters) which constitutes the fractional foot/meter portion of the "high-high" alarm limit for product level in the referenced tank. When the actual value reaches the high-high limit value set for this point, the point will go into alarm.

Alarm Color - Color to display alarm message and dynamic value representation of the referenced tank level when a "high-high" alarm condition is reported.

LOW LOW Fields:
Feet/Meters - Decimal value (max = 99 feet or 32 meters) which constitutes a "low-low" alarm limit for product level in the referenced tank. When the actual value becomes less than the low-low limit value set for this point, the point will go into alarm.

Inches/Centi - Decimal value (max = 11 inches or 99 centimeters) which constitutes the fractional foot/meter portion of the "low-low" alarm limit for product level in the referenced tank. When the actual value reaches the low-low limit value set for this point, the point will go into alarm.

Alarm Color - Color to display alarm message and dynamic value representation of the referenced tank level when a "low-low" alarm condition is reported.

➔ **To change the Alarm color:**

 Click on required button. A pop-up pallet of standard colors will be displayed. Click on the required color. The selected color will now be displayed on the button top.

Note: The default color (Black) will specify NO ALARM and will disable alarm limit checking. If an alarm limit is defined, a color must be chosen other than "Black".

5. When you have completed all your entries or changes, click on the button in the top of the window to save your changes.

   A "Database Modification" dialog box will appear displaying the progress for the addition/modification of the Tag in the RealFlex database.

3.5.5.2 Edit/Create Tank Strapping Tables

Editing or creating Tank Strapping Tables can only be carried out by Flex.View users with a Development licence and appropriate user-level access.

In the Tag properties window for Tanks, the Edit strapping table button allows you to create or edit linear or non-linear strapping tables. A strapping table is used by the data processor to calculate the volume of fluid in a tank, based upon the fluid level reported by a tank level transmitter.

Note: Before this feature can be used, a tank scan point must be defined and stored, specifying the "Max Level", "Max volume" and a "Level conversion type" of 2, 3 or 4.

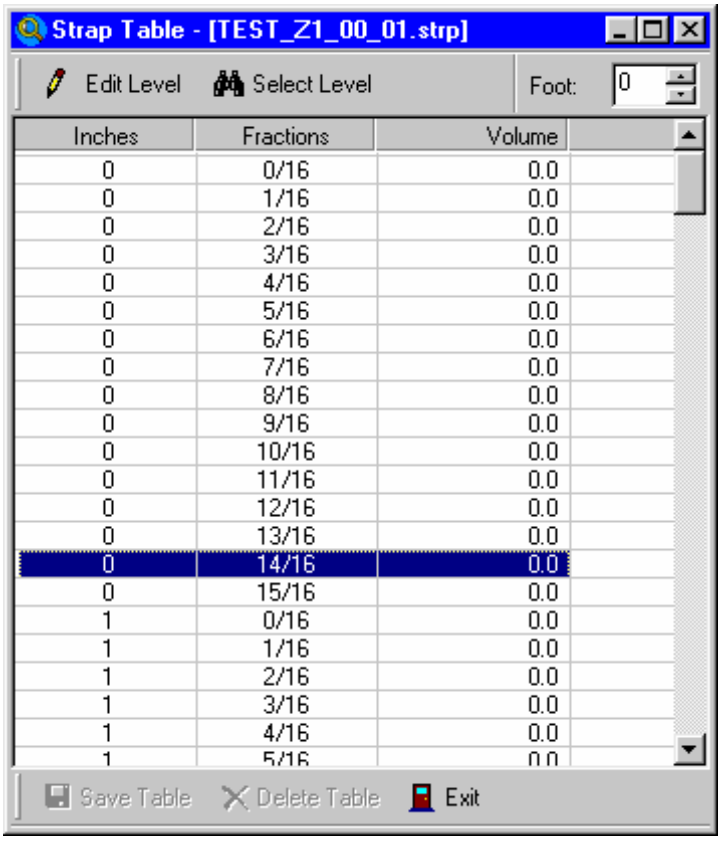
If the level conversion type is 2 or 3, indicating incremental strapping tables in English units, then this refers to the precision of the data to be entered in the table. The two allowable responses are: "8", which signifies that a volume is to be entered for every 8th of an inch, and "16", which signifies that a volume is to be entered for every 16th of an inch.

➔ **To create a new strapping table:**

1. From the "Tag Properties" window, click on the **Edit strapping table** button. Flex.View will attempt to recover an existing strapping table, but as a table has not yet been defined, the following message will be displayed:

2. Click on the **OK** button.

   The new "Strap Table" dialog box for the selected point will appear:

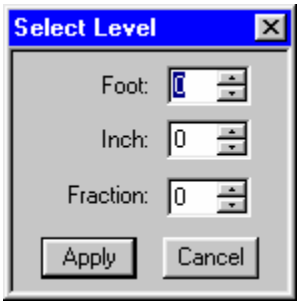


When the “Strapping Table” dialog box is first accessed, all of the values in the "Volume" fields will be "0.0". The only editable field in this window is the "Volume" entry. The "Volume" field represents the volume of the tank at the selected level. All other information is provided to inform the user of the name of the strapping table being edited, the current level and the fraction selected.

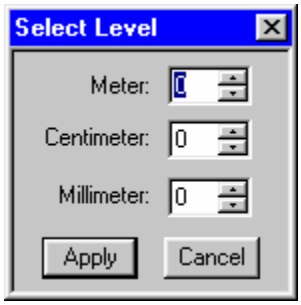
The buttons on the "Strap Table" dialog box are:

Allows you to edit the volume for an entry on an existing table or to set the volume in a new table.

When selected, one of the following dialog boxes will appear:



English



Metric

This allows the user to move anywhere in the table using the level to determine position.

Allows you to save any changes or additions to the current table.

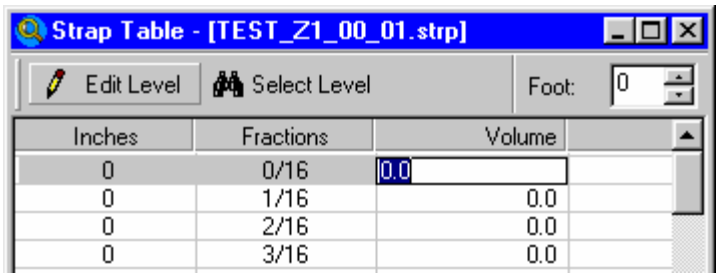
Will delete the current table.

Exit Allows you to exit the Strap Table and return you to the Tank Tag Properties window.

3. Click on the Select Level button, the "Select Level" dialog box will appear:

4. Select required Foot, Inch and Fraction (English) or Meter, Centimeter and Millimeter (Metric), then click on the **Apply** button. This will allow you to move to the required level in the Strap Table window.

5. Click on the Edit Level button. When this button is pressed, the entry will appear as:



6. Enter the volume information. The "Volume" field can contain up to eight characters and one decimal place.

7. Once the volume information has been entered, click on the Save Table button. The strapping table will be saved and a message "Table (Tag name).strp successfully saved." will appear.

➔ **To edit an existing strapping table:**

1. From the "Tag Properties" window, click on the **Edit strapping table** button. The existing "Strap Table" dialog box will appear.

2. Select the entry you wish to edit by clicking on and highlighting the appropriate line. When the correct entry is selected, click on the Edit Level button and modify the information as discussed above.

Note: If a metric table was specified (level conversion type 4) in the Tank Tag properties window and is changed to English (level conversion type 2 or 3) the tank strapping table must be deleted and recreated to reflect the change in unit of measure specification. This also applies if the original selection was level conversion type 2 or 3 and is subsequently changed to 4.

➔ **To delete a strapping table:**

1. From the "Tag Properties" window, click on the **Edit strapping table** button. The existing "Strap Table" dialog box will appear.

2. Click on the Delete Table button. You will be prompted to confirm the deletion of the strapping table with a "Yes/No" selection. After selecting **Yes,** the strapping table will be removed.

To exit the "Strap Table" dialog box and return to the "Database Editor" window, click on the Exit button. If any changes have been made to the existing table and have not already been saved, you will be prompted to save the strapping table before exiting.

3.5.5.3 API volume correction for tanks

American Petroleum Institute (API) Volume Correction data processing can be applied to tank data. The corrections are applied to tank database points for which TANK TYPE is set to 3. Details concerning the corrections to be applied for each point are specified in user-generated files and associated database points.

Processing of tank data for datapoints with LEVEL CONV. TYPE = 3 is similar to processing for those with LEVEL CONV. TYPE = 2, except that API volume correction is applied. This works as follows: When a reading from a PCU is received for a type 3 tank, the usual strapping table calculations are made, producing the uncorrected product volume. Then the API correction calculation specified in file **/realflex/data/api/tnktbl** for the specific datapoint is applied to the uncorrected product volume to produce the corrected product volume. This value is placed in the PROD-VOL database field. If your installation supports "tank transactions" the BARREL field of each tank transaction display will contain the corrected value.

The correction factor calculated (CTL) is also placed in an analog database record (specified in the **tnktbl** file) so that it can be displayed in realtime displays.

Every type 3 tank point must have a separate record in the **tnktbl** file (located in subdirectory **/realflex/data/api**) to specify how its correction factor is to be calculated. The different types of calculations and the records required to produce them are described below. Each record consists of a number of elements. The file must be built according to same rules outlined for meters in the previous section.

Each **tnktbl** entry specifies the numerical data and associated database fields needed to perform the calculation, and each record also specifies one of the following calculation types:

(1) Spherical Butane Tank

Net Volume = Gross Volume * CTL

The CTL is calculated using the product relative density constant and the scanned product tank temperature as input to the GSA TP16 routine which has been modified to calculate only a TABLE 24 correction factor based on relative density and product temperature. No vapor pressure correction is done at this time, but the structure of the **tnktbl** is designed to include vapor pressure, to allow for future expansion.

Tank_tag Database point name tag.

RTU_tag Database RTU name tag.

4 Menus

4.1 Main menu

The "Main" menu offers the following commands:

RealFlex Summaries - Provides the primary methods for accessing RealFlex summary screens. For details, please refer to Section 4.1.1.

Data Summaries - Provides the primary methods for accessing RealFlex Data summary screens. For details, please refer to Section 4.1.2.

Demand Reports - Provides the primary access to allow you to print standardized reports, access to additional RealFlex Utilities and printed summaries reflecting system data and to request a partial or complete report of the alarms. For details, please refer to Section 4.1.3.

User Login/Logoff - Allows you to Log On or Log Off your RealFlex application. For details, please refer to Section 4.1.4.

About Flex.View - Used to display Flex.View program information. For details, please refer to Section 4.1.5.

Exit Flex.View - Allows you to exit the Flex.View program. For details, please refer to Section 4.1.6.

4.1.1 RealFlex Summaries

RealFlex Summary Screens provides the Data-Type Summary utility to allow viewing of all system database points of a given type on a multi-page display. The **PageUp** and **PageDown** keys and the on-screen buttons can be used to scroll through the pages. The points defined for the given type are shown listed alphabetically by tag name and grouped by PCU association. Values and states depicted represent a current-state "snapshot" at the time the summary was requested and thus, will not be updated to reflect realtime changes. As is applicable, alarm conditions will be indicated.

While in realtime display mode, the Data Summary process is invoked via the Main menu. A pop-up menu window is displayed to allow selection of the desired data-type summary. While viewing a summary, use the **Page Up** and **Page Down** on-screen buttons to scroll through additional pages.

The RealFlex Summaries menu offers the following commands:

System - PCU - Allows you to view all PCU's and points defined for the Flex.View system. See Section 2.2.1.

Communications - Displays the status of each PCU communicating with remote devices. See Section 2.2.2.

Active Alarms - Provides active alarm/event data display for all points in the system or sorted by PCU name. See Section 2.2.3.

Historical Alarm/Event - Allows you to review alarms and events that have occurred during recent operations. See Section 2.4.2.

From the Summary Screen you can capture data values or information at a specific point in time by copying the whole summary or the displayed page to the Clipboard as plain text. You can then paste the contents of the Clipboard into another application, (e.g., WordPad, Excel etc.). Right-click on the open summary and select **Copy Page** or **Copy All** from the pop-up menu.

4.1.2 Data Summaries

For details of Data Summaries, please refer to Section 2.4.1.

4.1.3 Demand Reports

The Demand Reports sub-menu offers the following commands:

Note: You must be connected to the RealFlex server before you can use these options.

User report - Allows you to print standardized reports, access additional RealFlex Utilities and printed summaries reflecting system data. See Section 4.1.3.1.

Selective Alarm Print - Allows you to request a partial or complete report of the alarms. See Section 4.1.3.2.

4.1.3.1 User report

The Demand Reports options (available from the "Main" menu) allow the user to generate a saved report to a temporary file, bypassing the Report Scheduler option.

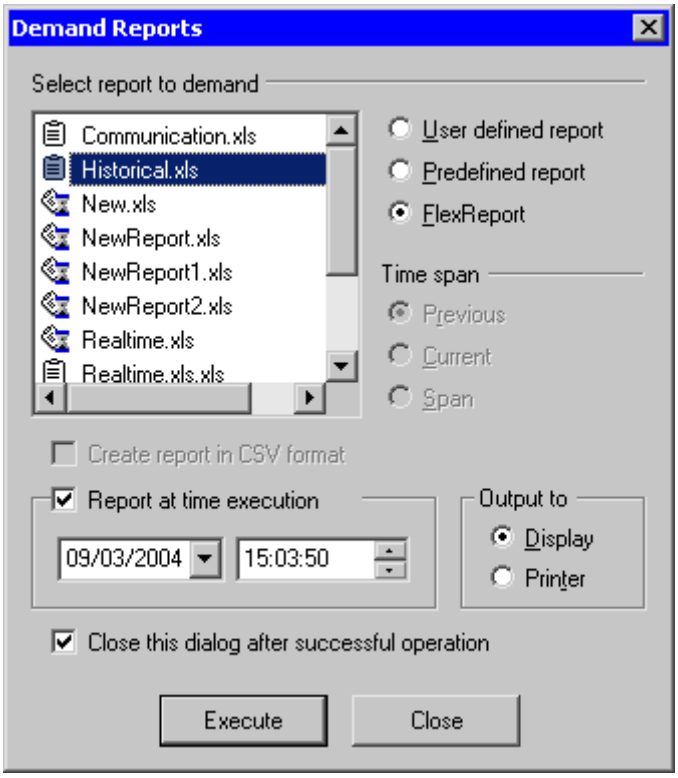
Prior to using the "User report" option, user defined reports and Flex.Reports must already be saved under a name.

➔ **To demand a report:**

Note: Access to this option may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

 From the **Main** menu, select **Demand Reports** and then select **User Report** from the sub-menu.

The "Demand Reports" window will appear:



➔ **Selecting required report:**

1. Select "User defined report", "Predefined report" or "FlexReport" as required by clicking on the appropriate option button.

2. Click on and highlight desired report in the "Select report to demand" list, or exit by clicking on the **Close** button, or the ☒ in the upper right-hand corner of the window.

➔ **Setting time span:**

The "Time span" options are only active when selecting "User defined report".

Options are.

Previous - Will provide a report for the time period set for the report working backwards from either the current time, or from the time set in the "Report at time execution" section.

Current - Will provide a report for the time period set for the report for either the current time, or for the time set in the "Report at time execution" section.

Span - Will provide a report for the time period set for the report working backwards from either the current time, or from the time set in the "Report at time execution" section.

➔ **Setting time of execution:**

This section is only active when selecting "User defined report" or "FlexReport".

The "Report at time execution" section is used to define the start date and time for the period to be covered. For example, when selecting a "User defined report" and the time set is not changed, then it will have no effect. If the "Time span" is set to "Previous" or "Current", e.g., for a "Daily report", choosing the "Previous" option will print 24 values for the previous day. Choosing the "Current" option will print values from midnight to current hour. But if you change the "time set" to yesterday, then this date dictates when previous starts.

- Click on the "Report at time execution" check-box, a tick will appear when activated.

➔ **To set the date and time:**

- Please refer to Section 1.7.13, "Setting Date and Time fields".

➔ **Setting Output to:**

You can choose where to send the report. Options are:

Display - The output is displayed on the Flex.View screen using the WordPad application or whichever application the user configures as the Report Viewer in the Application window of the "Configuration - Options" menu.

You can view the report and if required, print the report using the Print option of your chosen Report Viewer.

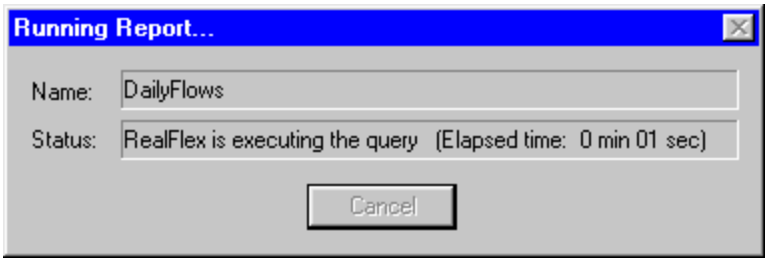
After the report has been displayed on the Flex.View screen, you can save the report using the Save option of your chosen Report Viewer.

For a "User defined report", you can use the default file format as used by the Report Viewer, or as a CSV format file by clicking on the **Create report in CSV format** check-box. A tick will appear when active. A file saved in the CSV format can be opened in Microsoft Excel. In Excel the information can be analysed more easily.

Printer - The output will be sent directly to the printer defined in the "Printer Config" option of the "Configuration" menu.

➔ **Running the report:**

- Click on the **Execute** button to generate the report. The "Running Report..." window will appear providing you with details of the report execution in the "Status:" field:



Depending on your selection for the "Output to" option, the report will be displayed on the Flex.View screen or sent direct to the printer.

The "Demand Reports" window will automatically close unless the tick is removed from the **Close this dialog after successful operation** check-box.

4.1.3.2 Selective Alarm Print

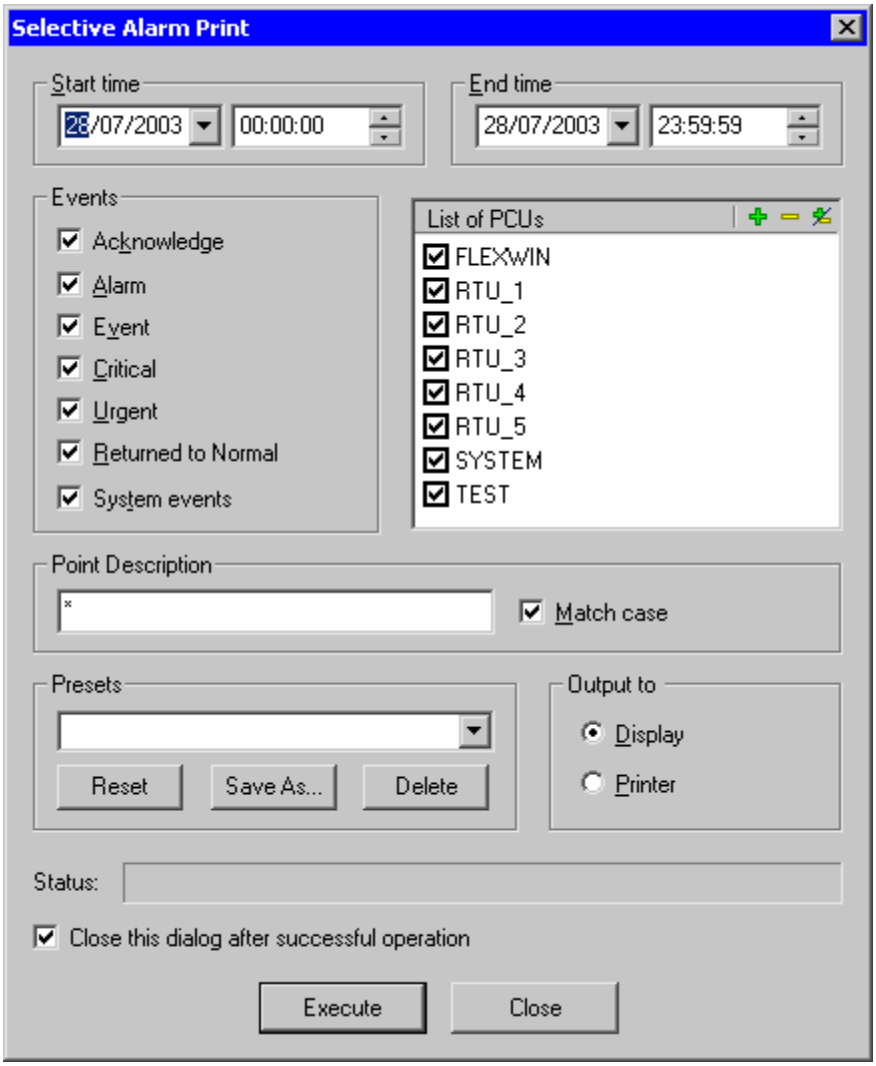
The Selective Alarm Print window is used to request a partial or complete report of the alarms.

➔ **To access the Selective Alarm Print window:**

Note: Access to this option may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

1. From the **Main** menu, select **Demand Reports** and then select **Selective Alarm Print** from the sub-menu.

   The "Selective Alarm Print" window will appear:



2. Complete all fields as appropriate.

The significance of each field in the display is:

Start time / End time:

The "Start time" and "End time" fields are used to set the time of capture for the report. The default is one 24-hour period (of the current day).

➔ **To change the Start/End date or time:**

 Please refer to Section 1.7.13, "Setting Date and Time fields".

Events section:

You may choose to print all events for a particular day or you may choose to print selected events. Click on each check-box to select option, a tick will appear when selected. Options are:

Acknowledge - Prints all acknowledged alarms.
Alarm - Prints all alarms.
Event - Prints all events.
Critical - Prints all critical alarms.
Urgent - Prints all urgent alarms.
Returned to Normal - Prints all alarms returned to normal.
System events - Prints all system events.

List of PCU's section:

This field lists all defined PCU's. You may select to print all PCU's or a selected set of PCU's. A tick in the check-box to the left of the PCU indicates that it has been selected.

To select All, click on the button. Conversely, to de-select all, click on the button.

To choose individual PCU's, click on the check-box to the left of the required PCU's to toggle between selected and unselected.

To invert the selection, i.e., change all selected to unselected and all unselected to selected, click on the button.

Point Description section:

You can choose to print all points or you can choose to print a single point or range of points.

To print all points, simply type an asterisk **(*)** in the "Point Description" field.

To print details for a single point, type ***point description name***. For example, if you want to print details for "TANK 1 LEVEL", type **TANK 1 LEVEL**.

To print details for all activities related to "TANK 1", type ***TANK 1*.** The asterisk before and after TANK 1 is used as a wild card to request all point descriptions containing "TANK 1", i.e., TANK 1 LEVEL, OUTFLOW TANK 1 etc.

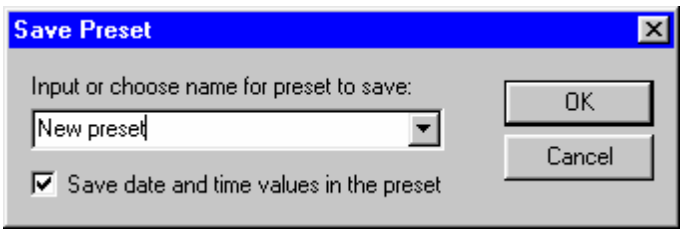
The "Match case" check-box distinguishes between uppercase and lowercase characters. When "Match case" is selected, Flex.View finds only those instances in which the capitalization matches the text you typed in the Point Description field.

Presets section:

The "Presets" section is used to save your selections in the "Selective Alarm Print" window and build a library of your commonly used reports.

➔ **To save your selections:**

1. Click on the **Save As...** button. The "Save Preset" window will be displayed:



2. In the "Input or choose name for preset to save" field, type a meaningful name to describe the report, or if you are editing an existing report, click on the button and select the required report from the drop-down list. If you want to fix the selected date and time used, click on the "Save date and time values in the preset" check-box.

3. Click on **OK** to save your report and add it to the Presets list.

➔ **To delete a Presets report:**

1. Click on the button to the right of the "Presets" field and select required report for deletion from the drop-down list.

2. With the required report displayed in the "Presets" field, click on the **Delete** button.

The **Reset** button is used to return the "Selective Alarm Print" window back to the default settings, i.e., current date and time and all options selected.

Output to section:

You can choose where to send the report.

Options are:

Display - The output is displayed on the Flex.View screen using the WordPad application or whichever application the user configures as the Report Viewer in the "Application" window of the "Configuration - Options" menu.

You can view the report and if required, print the report using the standard "File - Print" option in WordPad.

Printer - The output will be sent directly to the printer defined in the "Printer Config" option of the "Configuration" menu.

➔ **Running the report:**

 Click on the **Execute** button to generate the report. The "Status" field will display in plain language the current status of the application or error messages when the report is running.

Depending on your selection for the "Output to" option, the report will be displayed on the Flex.View screen or sent direct to the printer.

The "Selective Alarm Print" window will automatically close unless the tick is removed from the **Close this dialog after successful operation** check-box.

4.1.4 User Logon/Logoff

For details on User Logon/Logoff, please refer to Section 1.8.

4.1.5 About Flex.View

Selecting **About Flex.View** from the **Main** menu will display Flex.View program information similar to the display below.

Use this command to display information about the Flex.View software you are using, such as; software version number and build number; licence type (Development or Runtime); registration ID and copyright. This information can be given to the support engineer in the event of a problem with Flex.View.

From the "About Flex.View" window, you can visit the Datac WEB site, or send an e-mail to the Datac Sales department to enquire about other Datac or Flex.Win products.

➔ **To send our Sales department an e-mail:**

1. Click on the **sales@datac-technologies.com** hyperlink. Your e-mail application will be opened where the Datac contact address will be entered automatically.

2. Type in your query or request and send the e-mail to us in the normal way.

➔ **To visit the Datac Technologies Limited WEB site:**

 Click on the **www.datac-technologies.com** hyperlink. Your WEB browser will be opened and the Datac WEB site will be dialled.

4.1.6 Exit Flex.View

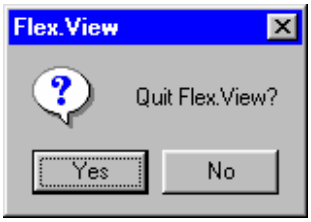
The "Exit Flex.View" option from the "Main" menu allows the user to make a graceful exit from Flex.View (shutting down all associated tasks).

Note: Access to this option may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

➔ **To exit Flex.View:**

For Microsoft Windows look and feel:

1. From the **Main** menu, select the **Exit Flex.View** option. The "Quit Flex.View?" pop-up is displayed:



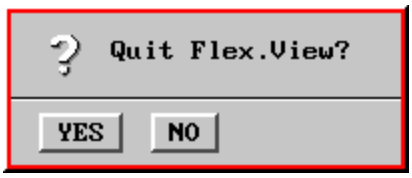
2. To cancel the exit process, select **No**, to proceed and exit, select **Yes**.

Note: Alternative methods of exiting the Flex.View program are:

- Right-click on the application's Control menu button or on the icon in the Taskbar and select **Close** from the pop-up menu.
- Double-click the application's Control menu button.
- Click the button on the right-hand side of the title bar.
- With the "Flex.View" application window active, key **Alt+F4**.

For RealFlex4 look and feel:

1. From the **Main** menu, select the **Exit Flex.View** option. The "Quit Flex.View?" pop-up is displayed:



2. To cancel the exit process, select **NO**, to proceed and exit, select **YES**.

Note: Alternative methods of exiting the Flex.View program are:

- Right-click on the icon in the Taskbar and select **Close** from the pop-up menu.
- With the "Flex.View" application window active, key **Alt+F4**.

The system implementor has the ability to password protect or prevent certain users from exiting Flex.View.

4.2 Utilities menu

The "Utilities" menu allows you to gain access to the following options:

Print Window - Allows you to print a copy of the current Flex.View window. For details, please refer to Section 4.2.1.

Print Preview - Allows you to display the active window as it would appear when printed. For details, please refer to Section 4.2.2.

Print Alarm Page - Allows you to print the contents of the Alarm page. For details, please refer to Section 4.2.3.

Report Scheduler - Allows you to schedule and execute reports on a timed basis. For details, please refer to Section 4.2.4.

Set Server Time/Date - Allows a user to set the Date and Time on the RealFlex Server. For details, please refer to Section 1.6.

Project Journal - Allows a user to view a log of errors and warnings generated for the Project currently open. For details, please refer to Section 4.2.5.

Remote Modules Help - Provides access to the on-line Help files on the RealFlex QNX server. For details, please refer to Section 4.2.6.

4.2.1 Print Window

The "Print Window" option from the "Utilities" menu, allows you to print a copy of the active Display or Summary. This command presents a Print dialog box, where you may specify the destination printer, the range of pages to be printed, the number of copies, and other printer setup options.

4.2.2 Print Preview

Use this command to display the active Display or Summary, as it would appear when printed. When you choose this command, the main window will be replaced with a print preview window in which a single page will be displayed in their printed format. The buttons in the print preview toolbar, shown below, offers you options to move back and forth through the pages; zoom in and out of pages; initiate a print job; close the print preview window.

Print Preview toolbar:

Brings up the Print dialog box, to start a print job.

Take a closer look at the printed page (See note below).

Take a larger look at the printed page (See note below).

Preview the previous printed page.

Preview the next printed page.

Exits the Print Preview and returns you to the previous Flex.View window.

Note: When you position the pointer over the display image the pointer turns into a magnifying glass. Clicking the left mouse button reduces or enlarges the view. The new view is centered wherever you click.

4.2.3 Print Alarm Page

The Print Alarm Page option allows you to print the contents of the Alarm page.

Note: If the "Print Alarm Page" option in the "Utilities" menu does not appear, or is grayed out, then the "Enable Alarm printing" option in the "Alarms" window of the "Configuration - Options" menu has not been activated (no tick in check-box).

➔ **To print the Alarm page:**

 From the **Utilities** menu, select the **Print Alarm Page** option. The contents of the Alarm page will be sent to your printer.

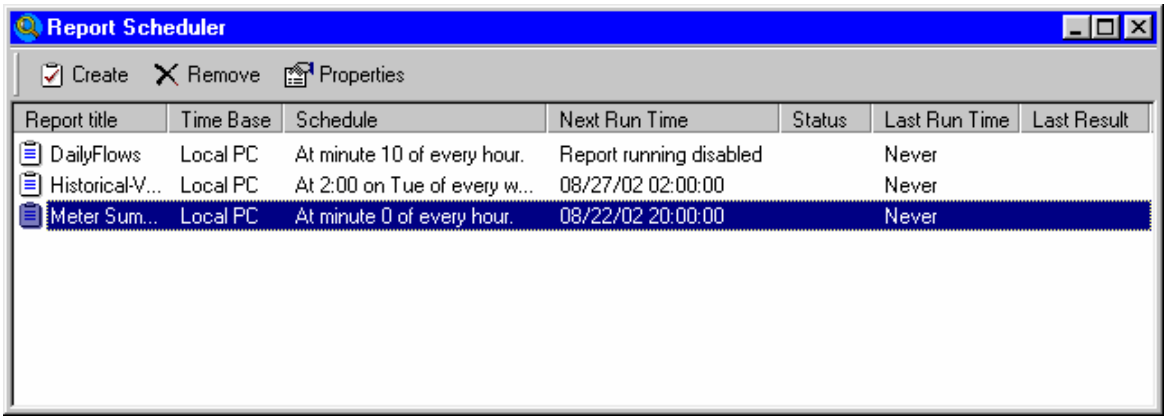
4.2.4 Report Scheduler

The Report Scheduler option is used to schedule and execute user and predefined reports on a timed basis. Reports may be sent to the printer defined in the "Configuration menu - Printer Config" option, sent to file or sent to an e-mail address.

Prior to using the “Report Scheduler” option, user reports must already be saved under a name or title.

➔ **To access the Report Scheduler:**

- From the **Utilities** menu, select the **Report Scheduler** option. The "Report Scheduler" window will appear:



The "Report Scheduler" window displays a list of scheduled reports displaying the Report name or title, the time base used, the time it is scheduled to run, the next time it will be run, its status, the time it was last ran and the result of the last run.

➔ **To schedule a report:**

1. Click on the Create button. The "Scheduled Report Properties" window will appear.
2. In the "Scheduled Report Properties" window, set the properties for the report. For details, please refer to Section 4.2.4.1.

Other scheduled reports may be added to the list by repeating the above procedure.

➔ **To delete a scheduled report from the list:**

1. Click on and highlight required report to be deleted.
2. Click on the Remove button. A window is displayed asking you for confirmation. Click on the **Yes** button to remove the report or click on the **No** button to abort the operation.

➔ **To edit the properties of an existing report:**

1. Click on and highlight the report to be edited.
2. Click on the Properties button. The "Scheduled Report Properties" window will appear.
3. In the "Scheduled Report Properties" window, modify the properties for the report. For details, please refer to Section 4.2.4.1.

4.2.4.1 Scheduled Report Properties window

The Scheduled Report Properties window is used to set the properties for scheduled reports.

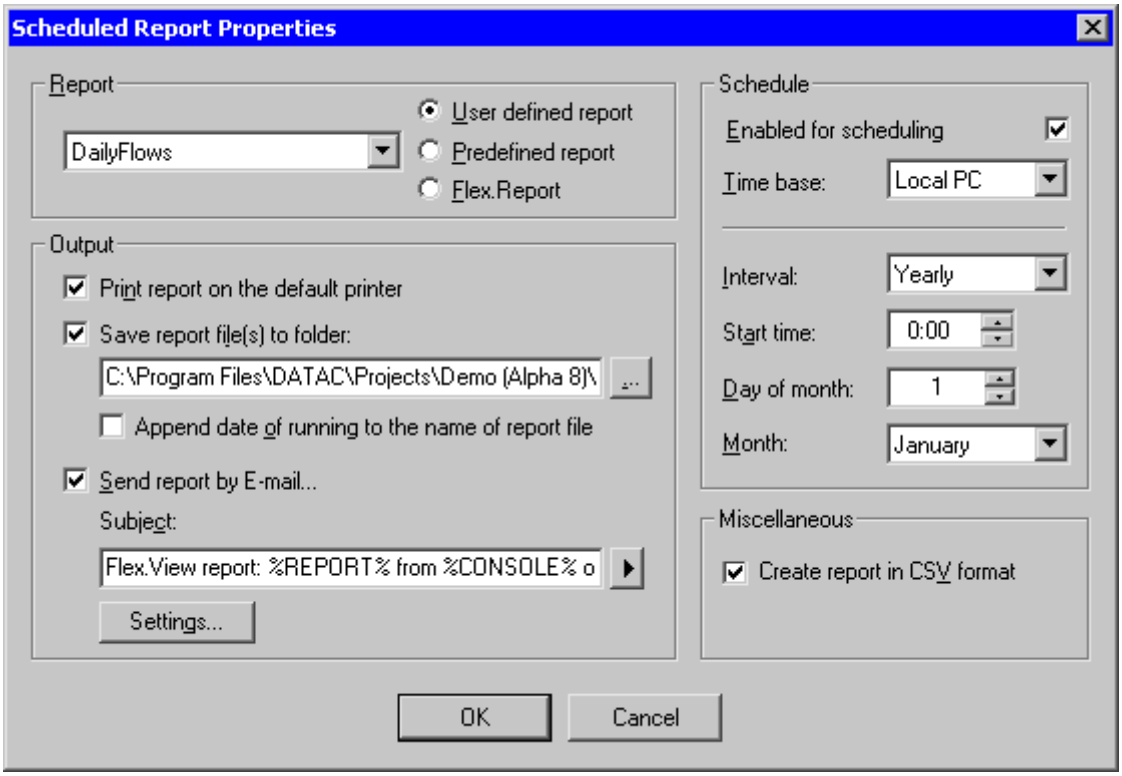
➔ **To access the Scheduled Report Properties window:**

- ***When adding a new report:*** From the "Report Scheduler" window, click on the

button.

- ***When editing an existing report:*** From the "Report Scheduler" window, click on and highlight the report to be edited, then click on the Properties button.

  The "Scheduled Report Properties" window will be displayed:



  The "Scheduled Report Properties" window is divided into four sections; "Report", "Schedule", "Output" and "Miscellaneous".

Report section:

1. Choose the type of report by clicking on the appropriate option box. Options are "User defined report", "Predefined report" and "Flex.Report".

2. Click on the button of the "Report" field and select required report from the drop-down list.

Schedule section:

Enabled for scheduling - This option allows you to enable/disable the scheduling of the report. Click on the check-box to toggle between enabled and disabled. A tick will appear when enabled and the report will be printed at the scheduled time set. If disabled (no tick), the report will not be run and "Report running disabled" will appear for this report in the "Next Run Time" column of the "Report Scheduler" window.

Time base - Click on the button of the "Time base:" field and select required option from the drop-down list.

Choices are:
Local PC: The date and time of your PC clock.
Server PC: The date and time of the clock of the RealFlex server (local time).

Interval - Allows you to set the time interval for printing the report.

- Click on the button of the "Interval:" field and select a time period from the drop-down list (Every 15 min, Hourly, Daily, Weekly, Monthly or Yearly).

Depending on the time period set in the "Interval:" field, the field(s) below should be set as follows:

To set fields with the spinner buttons , either click on and highlight the portion of the time and type in the required figure, or click on and highlight the portion of the time in the time field and use the spinner buttons to select the required time.

Every 15 min - In the "Start minute:" field, set the time for the report to start running. May be set from 00 to 14 minutes.

Hourly - In the "Start minute:" field, set the time for the report to start running. May be set from 00 to 59 minutes.

Daily - In the "Start time:" field, set the time of day for the report to start running, shown in the format HH:MM. May be set from 0 to 23:59.

Weekly - In the "Start time:" field, set the time of day for the report to start running, shown in the format HH:MM. May be set from 0 to 23:59.

In the "Day of week:" field, click on the button and select the required day of the week from the drop-down list.

Monthly - In the "Start time:" field, set the time of day for the report to start running, shown in the format HH:MM. May be set from 0 to 23:59.

In the "Day of month:" field, select the required day of the month. May be set from 1 to 31.

Yearly - In the "Start time:" field, set the time of day for the report to start running, shown in the format HH:MM. May be set from 0 to 23:59.

In the "Day of month:" field, select the required day of the month. May be set from 1 to 31.

In the "Month:" field, click on the button and select the required month from the drop-down list.

Output section:

You can select any of the following options as required.

Print report on the default printer

- Click on this check-box to enable the sending of reports to the default printer. This is the printer defined in the "Configuration" menu, "Printer Config" option. A tick will appear when enabled.

Save report file(s) to folder

- Click on this check-box to enable the sending of the report to a file. A tick will appear when enabled and the field below will become active.

  In this field, the default path for reports is already displayed. If you want to change the path, click on the button and the "Browse for Folder" dialog box will appear.

  If you want to append the date to the file name, click on the "Append date of running to the name of the report file" check-box. A tick will appear when enabled.

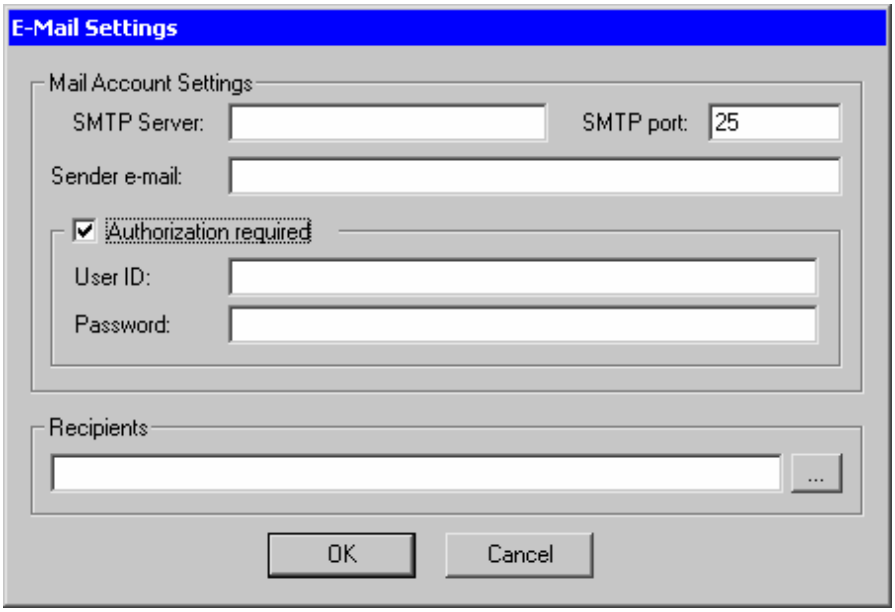
Send report by E-mail...

1. Click on this check-box to enable the sending of reports to a number of E-mail addresses. A tick will appear when enabled and the "Subject:" field below will become active.

2. In the "Subject:" field, a default subject topic "Flex.View report: %REPORT% from %CONSOLE% on %DATE% at %TIME%." will be displayed. This will translate as **Flex.View report: "(Report title)" from "(Console name)" on 29/07/2003 at 11:00:22.** in the "Subject" field of the E-mail.

   You can enter your own subject topic by overwriting the existing subject topic. As you enter your subject topic, you can insert a code for the "Report Name", "Date", "Time" or "Console Name" by clicking on the button and selecting required option from the drop-down list.

3. Define your Mail Account settings and select your mail recipients by clicking on the **Settings...** button. The "E-Mail Settings" dialog box will appear:



   As Flex.View employs a totally independent mail sending mechanism, a user must specify the settings for the outgoing Mail Account and the recipients for the report.

4. In the "Mail Account Settings" section, complete the following fields. Users will need to access their mail software to obtain required information.

   When using Microsoft Outlook Express, this information can be found by selecting **Tools**, then **Accounts...**, and from the "Mail" tab of the "Internet Accounts" dialog box, select required mail account then click on the **Properties** button.

   SMTP Server: Enter the name or IP address for the Outgoing Mail server. For Microsoft Outlook Express, this is the name displayed in the "Properties" dialog box, "Server" tab, "Outgoing mail (SMTP)" field.

   SMTP Port: Port 25 is the standard SMTP port number.

   Sender e-mail: Enter the "User Information - E-mail Address", i.e., the address of the person sending the e-mail. For Microsoft Outlook Express, this is the name displayed in the "Properties" dialog box, "General" tab, "E-mail address" field.

Authorization required: Some E-mail systems require a User ID and a Password for sending mail, but most don't, most only require this information for incoming mail. If authorization is required for Sending Mail, click on the "Authorization required" check-box, tick in check-box. The two fields below will become active.

User ID: Enter required User ID for Outgoing mail.

Password: Enter required password for Outgoing mail. Passwords are not echoed to the screen while being entered.

5. In the "Recipients" section, click on the ... button. Flex.View uses MAPI to connect to the currently installed E-mail Software and request the Address Book containing a list of possible recipients.

   From the Address Book, select required E-mail address(es) then click on the **OK** button. For details, please refer to Section 4.2.4.2.

   If you are not using E-mail Software, then the address book will probably be empty and the user will have to manually type in the email addresses of the recipients. Each address should be separated by a semi-colon (;).

   After selecting addresses from the Address Book, you will be returned to the "E-mail Settings" dialog box where the selected E-mail address(es) will be displayed in the "Recipients" field. Each address will be separated by a semi-colon (;).

6. In the "E-mail Settings" dialog box, click on the **OK** button to return to the "Scheduled Report Properties" window.

Miscellaneous section:

The "Miscellaneous" option is only active when selecting the "User Defined Report" option in the "Report" section.

Create report in CSV format - Click on this check-box to create the report in CSV format. A tick will appear when active. A report created in the CSV format can be opened in Microsoft Excel. In Excel the information can be analysed more easily.

After you have set the report properties, click on the **OK** button. You will be returned to the "Report Scheduler" window where the new report will now be listed or the details for an existing report will be modified.

4.2.4.2 Address Book window

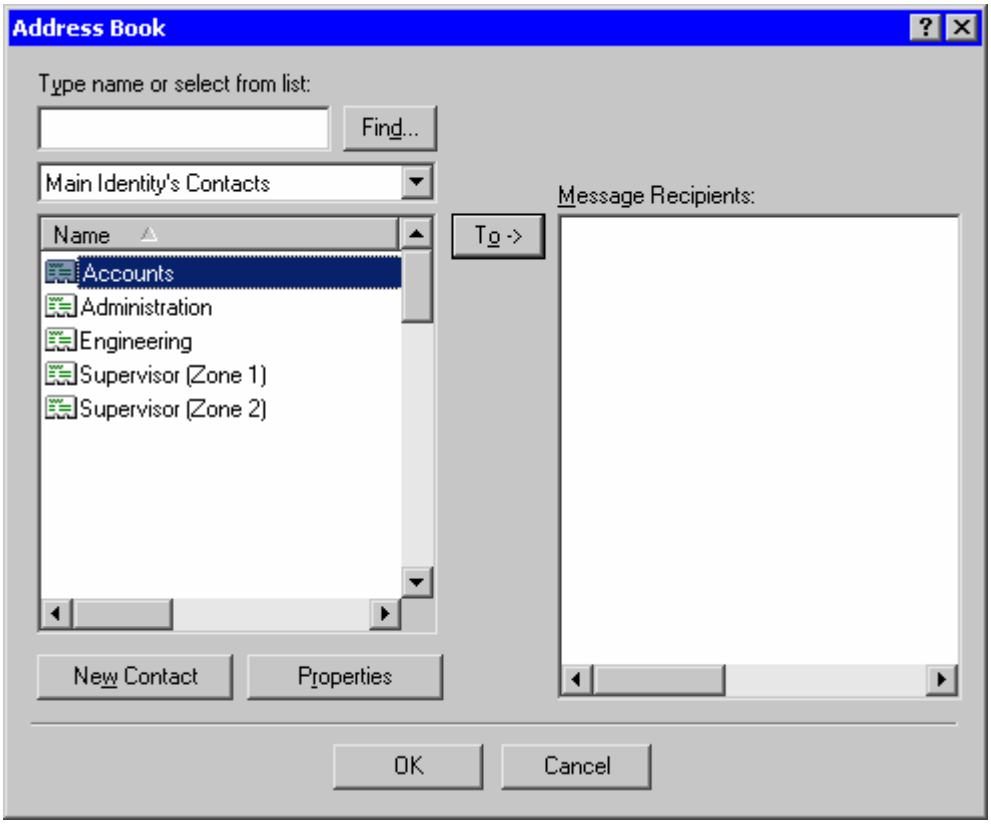
The "Address Book" window is used to select E-mail addresses for the sending of scheduled reports.

The examples shown below are for a user using Microsoft Outlook Express.

➔ **To access the Address Book window:**

- From the "E-Mail Settings" dialog box, click on the ... button in the "Recipients" field.

  The "Address Book" window will appear:



On the left-hand side of this window there are three fields with two buttons below.

The top field is a "Find" field that allows you to find people in the Address Book or Active Directory or people and businesses on the Internet. Clicking on the **Find...** button will display the Microsoft Outlook Express "Find People" window. For information on how to use this window, please refer to the Microsoft Outlook Express Help documentation.

The middle field allows you to select the Identity folder (or Contact group). Click on the button and select required folder from the drop-down list.

The bottom field lists all contact names for the selected Identity folder.

New Contact button: Clicking on this button will display the Microsoft Outlook Express "Properties" window allowing you to add new contacts to the currently selected Identity folder. For information on how to use this window, please refer to the Microsoft Outlook Express Help documentation.

Properties button: Clicking on this button will display the Microsoft Outlook Express "(Contact name) Properties" window allowing you to edit details for the selected contact name. For information on how to use this window, please refer to the Microsoft Outlook Express Help documentation.

The "Message Recipients" field on the right-hand side of this window list all contact names selected to receive the report.

➔ **To select recipients for the report:**

1. Select required Identity folder and from the list of contact names, click on and highlight required contact name.

   OR:

   Find required contact name via the "Find" field.

2. Click on the
To ->
button. The selected contact name will be added to the "Message Recipients" field.

3. If required, repeat Steps 1 and 2 above to add additional contact names to the "Message Recipients" field.

➔ **To remove a contact name from the "Message Recipients" field:**

1. In the "Message Recipients" field, click on and highlight the name to be removed.

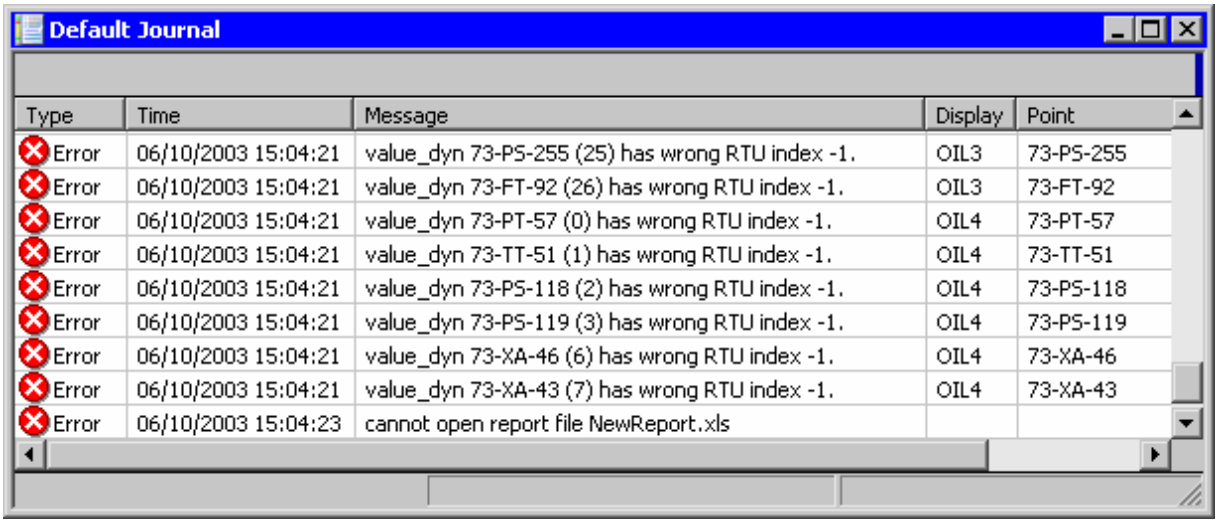
2. Press the **Delete** key.

After you have selected your recipients, click on the **OK** button. You will be returned to the "E-Mail Settings" dialog box where the selected E-mail address(es) will be displayed in the "Recipients" field.

4.2.5 Project Journal (Utilities menu)

The Project Journal option is used to view a log of errors and warnings generated for the Project currently open. Errors that may be reported include: values or tag points having wrong RTU indexing; unable to find files.

An example of the Default Journal is shown below:


Default Journal
Type
Time
Message
Display
Point
Error 06/10/2003 15:04:21 value_dyn 73-PS-255 (25) has wrong RTU index -1. OIL3 73-PS-255
Error 06/10/2003 15:04:21 value_dyn 73-FT-92 (26) has wrong RTU index -1. OIL3 73-FT-92
Error 06/10/2003 15:04:21 value_dyn 73-PT-57 (0) has wrong RTU index -1. OIL4 73-PT-57
Error 06/10/2003 15:04:21 value_dyn 73-TT-51 (1) has wrong RTU index -1. OIL4 73-TT-51
Error 06/10/2003 15:04:21 value_dyn 73-PS-118 (2) has wrong RTU index -1. OIL4 73-PS-118
Error 06/10/2003 15:04:21 value_dyn 73-PS-119 (3) has wrong RTU index -1. OIL4 73-PS-119
Error 06/10/2003 15:04:21 value_dyn 73-XA-46 (6) has wrong RTU index -1. OIL4 73-XA-46
Error 06/10/2003 15:04:21 value_dyn 73-XA-43 (7) has wrong RTU index -1. OIL4 73-XA-43
Error 06/10/2003 15:04:23 cannot open report file NewReport.xls

The significance of each column in the log is:

Type - May display "Error" or "Warning".

Time - The Date and time of day the error message was logged, shown in the format DD/MM/YYYY HH:MM:SS.

Message - Displays the nature of the error or warning.

Display - The name of the Display associated with the error or warning.

Point - The name of the Tag Point associated with the error or warning.

File name - The name of the File associated with the error or warning.

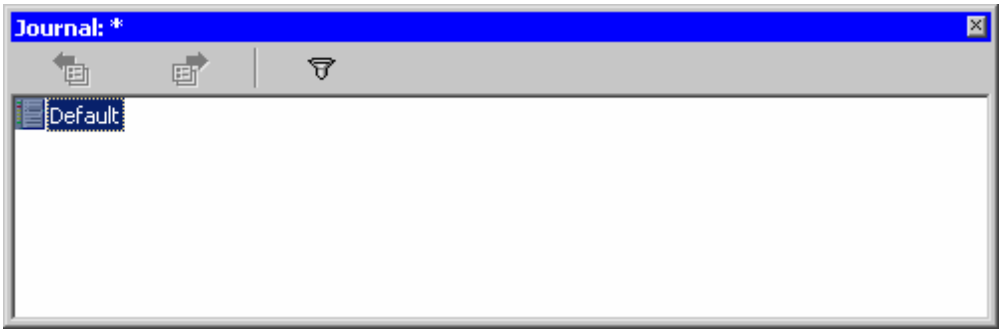
Symbol - The name of the Symbol associated with the error or warning.

➔ **To view the Project Journal:**

For Microsoft Windows look and feel:

 From the **Utilities** menu, select the **Project Journal** option.

If there is more than one Journal to choose from, the "Journal: *" window appears listing all defined Journals available for the project, sorted alphabetically by name.



If all selections are not shown and the window is full, clicking on the buttons located in the toolbar will scroll the list left or right to the desired name. You can also use the scroll bar if the required Journal is not visible.

➔ **To locate a specific name:**

- Click on the button. The "Set Filter" dialog box will appear:

Enter a text string to search for.

For example, if you wanted to locate all Journal with "xyz" in the name, you would enter "*xyz*" and click on the **OK** button. The "Journal: *" window will change to list only those Journals containing "xyz" in the name.

The "*" and last nine search patterns are saved and can be recalled by clicking on the button and selecting required search pattern from the drop-down list.

➔ **To select a Journal for viewing:**

- Click on the Journal name required.

For RealFlex look and feel:

- From the **Utilities** menu, select the **Project Journal** option.

If there is more than one Journal to choose from, the "Journal: *" window appears listing all defined Journals available for the project, sorted alphabetically by name.

If all selections are not shown and the window is full, clicking on the buttons located in the upper left corner of the window will scroll the list one page up or down to the desired name. **Note:** The Keypad arrow keys do not allow you to scroll through pages in this menu.

➔ **To locate a specific name:**

- Click on the asterisk (*) button. A pop-up window will appear:

Enter a text string to search for.

For example, if you wanted to locate all Journals with "xyz" in the name, you would enter "*xyz*" and press **Enter**. The "Journal: *" window will change to list only those Journals containing "xyz" in the name.

You may also choose to simply type the name (or first letters of a name) from the keyboard in the field at the top of the "Journal: *" window. A box will appear around the closest matching name.

➔ **To select a Journal for viewing:**

- Click on the Journal name required.

4.2.6 Remote Modules Help (Utilities menu)

The "Remote Modules Help" command from the "Utilities" menu provides access to the on-line Help files on the RealFlex QNX server. These files provide Help topics associated with the RealFlex QNX server.

The Remote Modules Help system uses HTML to format and display information.

Note: You must be connected to the RealFlex server before you can access the remote help files.

➔ **To access a Remote Help file:**

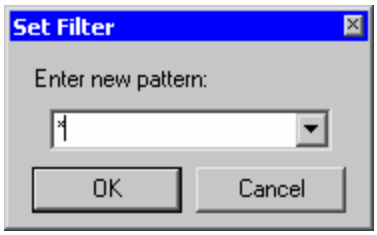
1. From the Utilities menu, select the Remote Modules Help option.

   The "Remote Modules Help: *" window will appear displaying a list of all Help files available on the RealFlex QNX server:

If all selections are not shown and the window is full, clicking on the buttons located in the toolbar will scroll the list left or right to the desired name. You can also use the scroll bar if the required file is not visible.

➔ **To locate a specific name:**

 Click on the button. The "Set Filter" dialog box will appear:



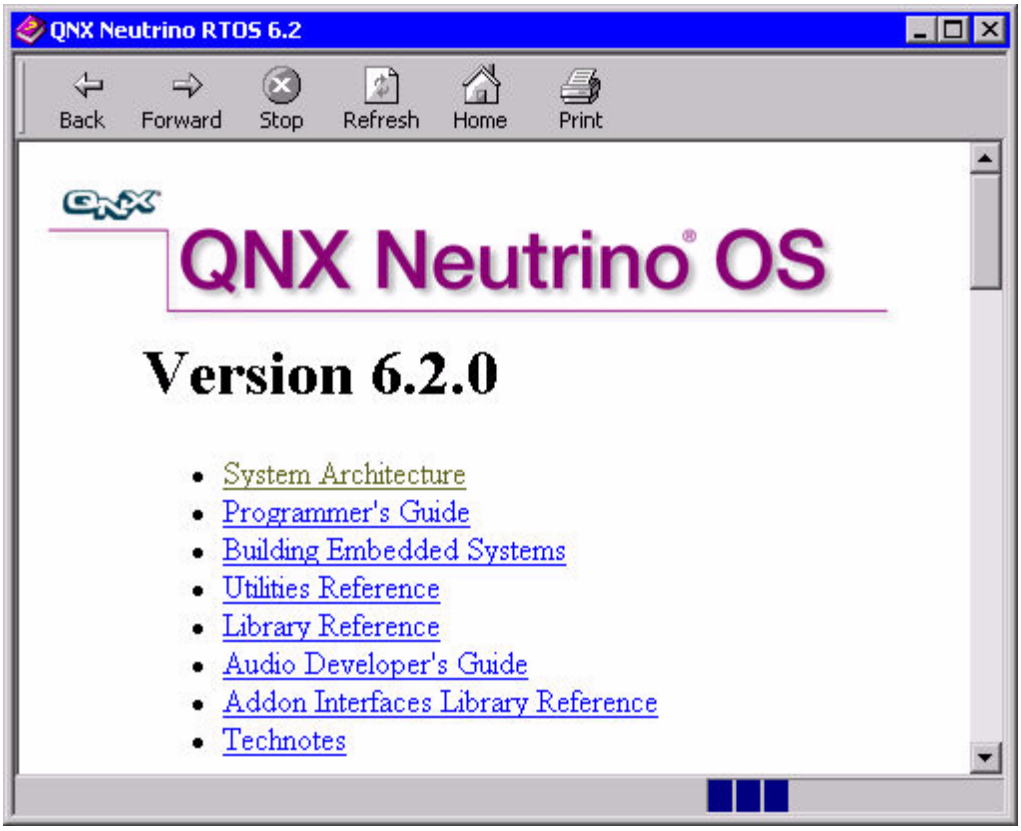
Enter a text string to search for.

For example, if you wanted to locate all files with "xyz" in the name, you would enter "*xyz*" and click on the **OK** button. The "Remote Modules Help: *" window will change to list only those files containing "xyz" in the name.

The "*" and last nine search patterns are saved and can be recalled by clicking on the button and selecting required search pattern from the drop-down list.

2. Double-click on required Help file.

The selected help file will be opened and displayed in a Internet Explorer type window:



The top pane displays the toolbar. It provides buttons for navigation, printing, refreshing the screen and other frequently used options (these are the Internet Explorer type toolbar buttons).

For Help information on the Flex.View application program, please refer to Section 4.5.1.

4.3 Configuration menu

The "Configuration" menu offers the following commands:

Open Project - Allows a user to open, add, remove, rename, backup, restore and import projects. For details, please refer to Section 4.3.1.

Connect to the Server - Allows a user to connect to the RealFlex server. For details, please refer to Section 4.3.2.

Disconnect - Allows a user to disconnect from the RealFlex server. For details, please refer to Section 4.3.3.

Check for Updates - Allows a user to manually check for updates on the RealFlex system. For details, please refer to Section 4.3.4.

Database Editor - Allows a user to access and edit certain fields in the Database. For details, please refer to Section 3.3.

Configuration File Editor - Allows a Flex.View user to access the Flex.CFE program allowing them to create or edit RealFlex System configuration files. You can also restart RealFlex on Node 1 or Node 2 and restart a CSL process. For details, please refer to Section 4.3.5.

Historical Editor - Allows for the addition, modification, and deletion of database points for historical recording, as well as providing a summary of points currently in the historical record mode. For details, please refer to Section 4.3.6.

Report Generator - Allows a user to create a new report or edit an existing report file using the Flex.Report application program. For details, please refer to Section 4.3.7.

Send Flex.Report File to the Server - Allows a user to register new and edited Flex.Report files on the RealFlex server. For details, please refer to Section 4.3.8.

Password Maintenance - Allows a user to add/remove user ID's and control the password access to menu options. For details, please refer to Section 4.3.9.

Desktop Layouts - Allows a user to store a number of different desktop layouts and recall them as and when required. For details, please refer to Section 1.4.

Printer Config - Allows a user to configure the local printer. For details, please refer to Section 4.3.10.

Options - Allows a user to change the Flex.View Application program start-up actions and configuration options. For details, please refer to Section 4.3.12.

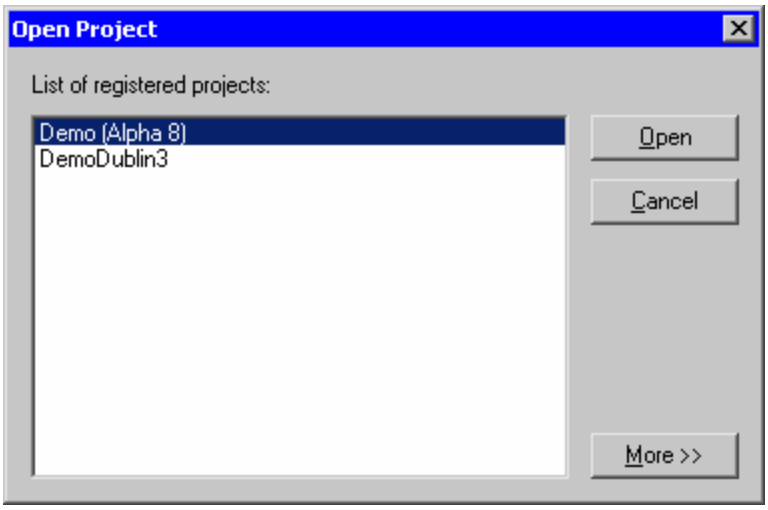
4.3.1 Open Project

If you have a number of separate RealFlex systems (Projects) in your plant, Flex.View allows you to access any one of those projects over the TCP/IP network.

The "Open Project" option from the "Configuration" menu allows you to open, add, remove, rename, backup, restore and import projects.

➔ **To open a project:**

1. From the **Configuration** menu, select the **Open Project** option. The "Open Project" window will be displayed listing all the projects available on your system.

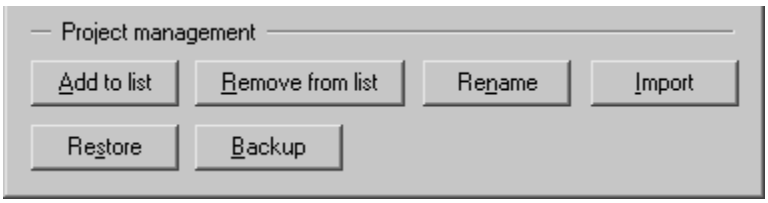


2. Click on and highlight the required project then click on the **Open** button.

➔ **To add a project to the list:**

Note: To add a project, the project directory and its associated files must already be available on your PC in the "Program Files/Datac/Projects" directory.

1. From the "Open Project" window, click on the **More >>** button. The "Open Project" window will expand to display a Project management section and six buttons.



2. Click on the **Add to list** button. A "Browse for Folder" dialog box will be displayed.

3. Look through the directories on your PC and select required project folder to be added then click on the **OK** button. The new project, providing it contains valid project files will be added to the "List of registered projects:".

➔ **To remove projects from the list:**

1. From the "Open Project" window, click on the **More >>** button to display the Project management section.

2. From the "List of registered projects:", click on and highlight the project to be removed.

3. Click on the **Remove from list** button. A window is displayed asking you for confirmation. Click on the **Yes** button to remove the project or click on the **No** button to abort the operation.

➔ **To rename a project:**

1. From the "Open Project" window, click on the **More >>** button to display the Project management section.

2. From the "List of registered projects:", click on and highlight the project to be renamed.

3. Click on the **Rename** button. The "Rename Project" window is displayed.

4. Type in the new name for the project then click on the **OK** button.

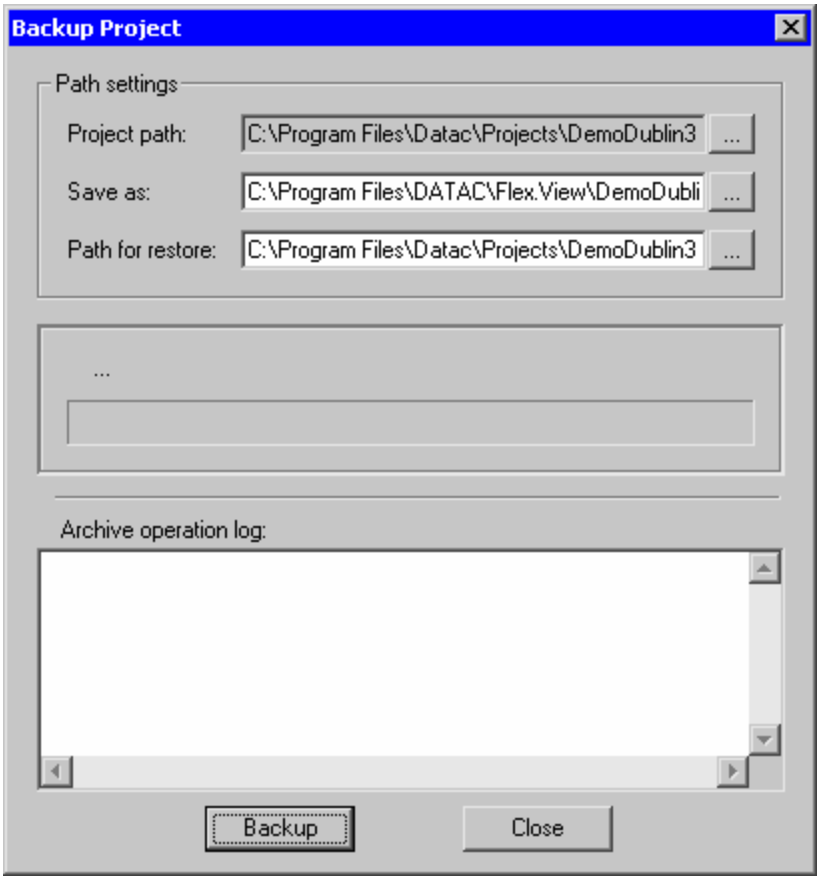
➔ **To backup a project:**

The Backup function allows you to backup any registered project on your "C:/Program Files/Datac/Projects" directory and save it as a backup file to a directory on your hard drive or to a floppy disc or CD. You may also backup a project you have on a floppy disc or CD and save it as a backup file to your hard drive.

1. From the "Open Project" window, click on the **More >>** button to display the Project management section.

2. From the "List of registered projects:", click on and highlight the project to be backed up.

3. Click on the **Backup** button. The "Backup Project" window will appear:



4. In the "Project path:" field, the path of the project you selected in the "Open Project" window will have already been entered.

   If you want to backup a different project you have on your hard drive, floppy disc or CD, click on the button on the right of this field. The "Browse for Folder" dialog box will appear where you can select the Project file required.

5. In the "Save as:" field, a default path and File name will have been entered automatically. If you want to backup the Project to another path and File name, click on the button on the right of this field. The "Save As" dialog box will appear.

6. Indicate the location and the name of the file to be saved, save as a "Flex.Win Backup Files (.fwa)" file, the file name can differ from the original name, then click on the **Save** button.

   You will be returned to the "Backup Project" window where the path and file name will now be entered in the "Save as:" field.

7. In the "Path for restore:" field, the default path for the restoration of the project is automatically entered. This is the path where the project is currently located and will be remembered and entered in the "Restore path" field of the "Restore Project" window.

   You may change this path for a directory on your hard drive, floppy disc or CD drive. Click on the button on the right of this field, the "Browse for Folder" dialog box will appear where you can select the path required.

8. Click on the **Backup** button. Details of the operation will be displayed in the "Archive operation log:" area.

   After successfully backing up the project, the message "Project backup is completed" will appear. Click on the **OK** button to proceed.

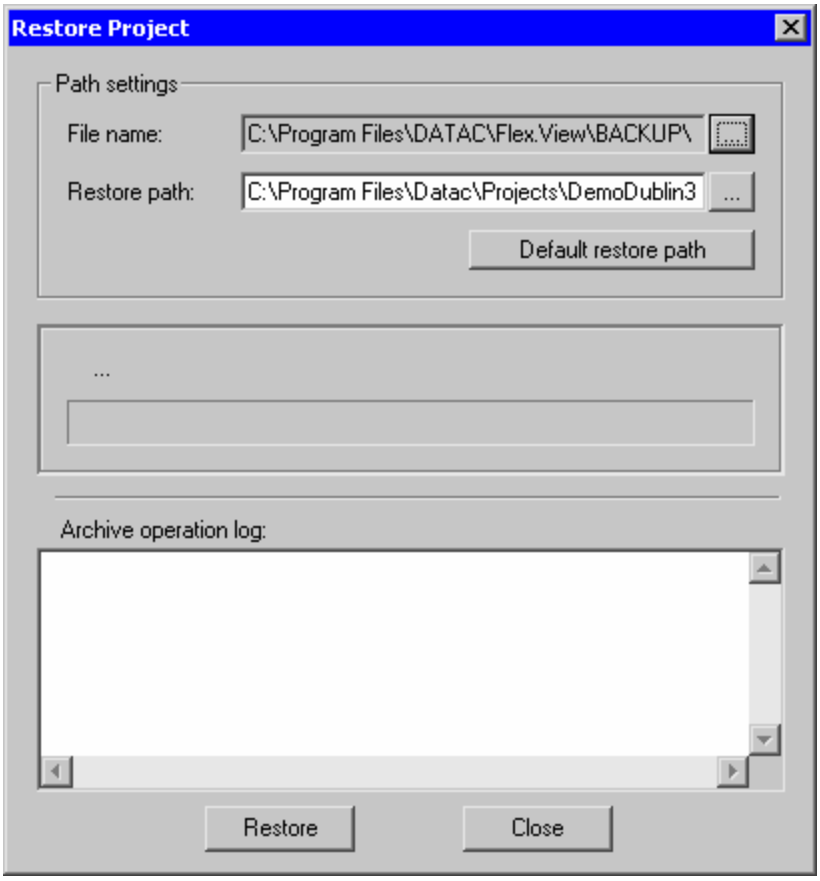
➔ **To restore a backup project:**

The Restore function allows you to restore a backup Project file to your "C:/Program Files/Datac/Projects" directory or to a floppy disc or CD.

1. From the "Open Project" window, click on the **More >>** button to display the Project management section.

2. Click on the **Restore** button.

   The "Restore Project" window will appear:



3. In the "File name:" field, click on the ... button on the right of this field. The "Open" dialog box will appear.

4. Locate the file to be restored, then click on the **Open** button. The "Files of type" will always be "Flex.Win Backup Files (*.fwa)".

   You will be returned to the "Restore Project" window where the path and file name will now be entered in the "File name:" field.

5. In the "Restore path:" field, the destination path for the restored file, based on the location entered in the "Path to restore:" field in the "Backup Project" window when it was backed up, will have been automatically entered.

   If you want to change the destination path and restore the Project to a different directory on your hard drive, a floppy disc or CD, click on the ... button on the right of this field. The "Browse for Folder" dialog box will be displayed to enable you to select a different restore path.

6. Click on the **OK** button.

   You will be returned to the "Restore Project" window where the path will now be entered in the "Restore path:" field.

   If you changed the restore path in step 5 above and wanted to reset the path to the default restore path, click on the **Default restore path** button.

7. Click on the **Restore** button. Details of the operation will be displayed in the "Archive operation log:" area.

   After successfully restoring the project, the message "Project restore is completed" will appear. Click on the **OK** button to proceed.

➔ **To import a project:**

For details on how to import a project, please refer to Section 4.3.1.1, "Importing Projects".

4.3.1.1 Importing Projects

The "Import" option from the "Open Project" window will only become active after you have disconnected from a Project or when Flex.View is started without any projects, i.e., when Flex.View has been installed on a PC for the first time.

Selecting this option will allow you to create a new project on your PC from an existing project file that has been originated on a RealFlex6 QNX machine.

The Import option is only used to Import projects from a RealFlex6 QNX machine. To import and convert projects from a RealFlex4 QNX machine, please use the Flex.Converter application program.

During the creation process, Flex.View initializes the project files on the RealFlex6 QNX machine. The initialized project files are then imported onto the hard drive of your PC.

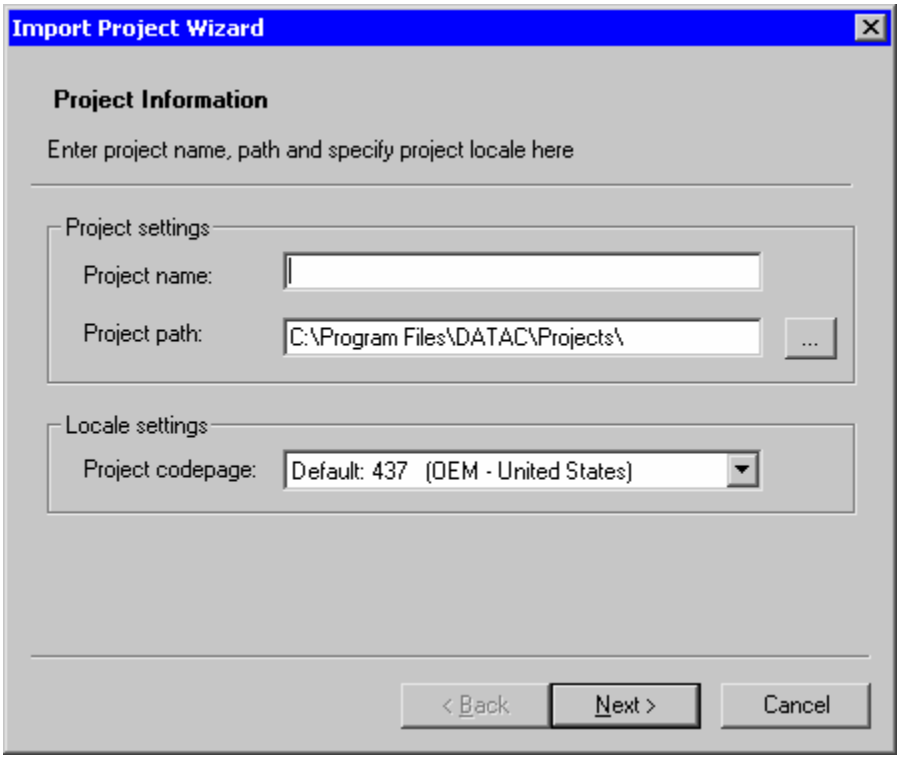
➔ **To Import a Project:**

1. From the **Configuration** menu, select the **Open Project** option. The "Open Project" window will be displayed listing all the projects available on your system.

2. Click on the **More >>** button. The "Open Project" window will expand to display a Project management section and six buttons.

3. Click on the **Import** button.

   The "Import Project Wizard - Project Information" window will appear:



4. In the "Project path:" field, click on the ... button to the right of this field. The "Browse for Folder" dialog box will appear.

5. Choose the directory path you wish to store the new project files. By default, all Project files are store in the "C:\Program Files\DATAC\Projects" directory.

   You will be returned to the "Import Project Wizard" window where the project path for the new project will now be displayed on the "Project path:" field.

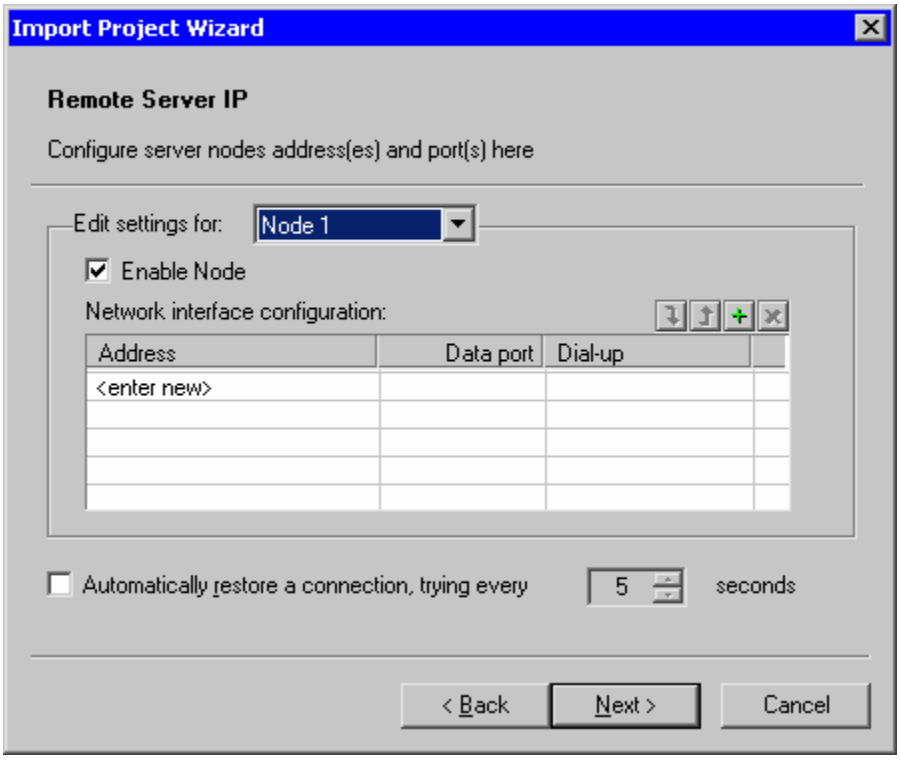
6. In the "Project name:" field, enter a name for the Project.

   As you enter the project name, the name will be added to the directory path in the "Project path:" field.

7. In the "Project codepage:" field, click on the button to the right of this field and select required language from the drop-down list.

8. Click on the **Next>** button.

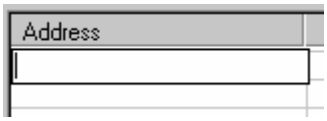
   The "Import Project Wizard - Remote Server IP" window will appear:



When you initially enter this window, Network parameter settings are normally displayed for Node 1 (Main). To set Node 2 (Standby) settings, click on the button of the "Edit settings for:" field and select "Node 2" from the drop-down list.

9. In the "Network interface configuration:" fields, enter the Address details (Address, Data Port and Dial-up) for the connection to the RealFlex QNX machine as shown below.

   Double-click on **<enter new>**, or click on the button. The "Address" field will become active with a flashing cursor as shown below:



   Type in the IP address for the RealFlex server.

   Double-click on the "Data port" field. The field will become active with a flashing cursor. Type in the number for the data port.

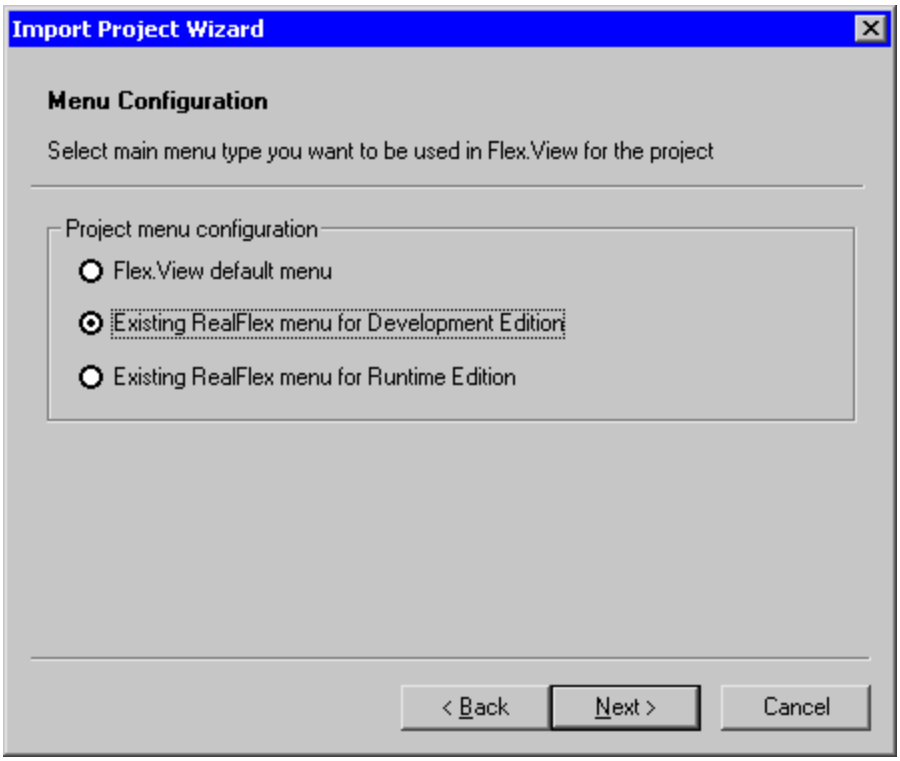
   Double-click on the "Dial-up" field, click on the button which appears to the right of this field and from the drop-down list, select a Dial-Up Networking connection to required Internet Service Provider (ISP), online service, or remote computer.

10. Click on the check-box to the left of "Automatically restore a connection". A tick will appear when activated.

    Enter a time interval in the "trying every XX seconds" field. Either double-click on and highlight the existing time and type in the new one, or use the spinner buttons to change the time. May be set from 0 to 999 seconds, default 5 seconds.

11. Click on the **Next>** button.

    The "Import Project Wizard - Menu Configuration" window will appear:


Import Project Wizard
Menu Configuration
Select main menu type you want to be used in Flex.View for the project
Project menu configuration
Flex.View default menu
Existing RealFlex menu for Development Edition
Existing RealFlex menu for Runtime Edition
< Back
Next >
Cancel

12. In the "Project menu configuration" section, select required option. Choices are:

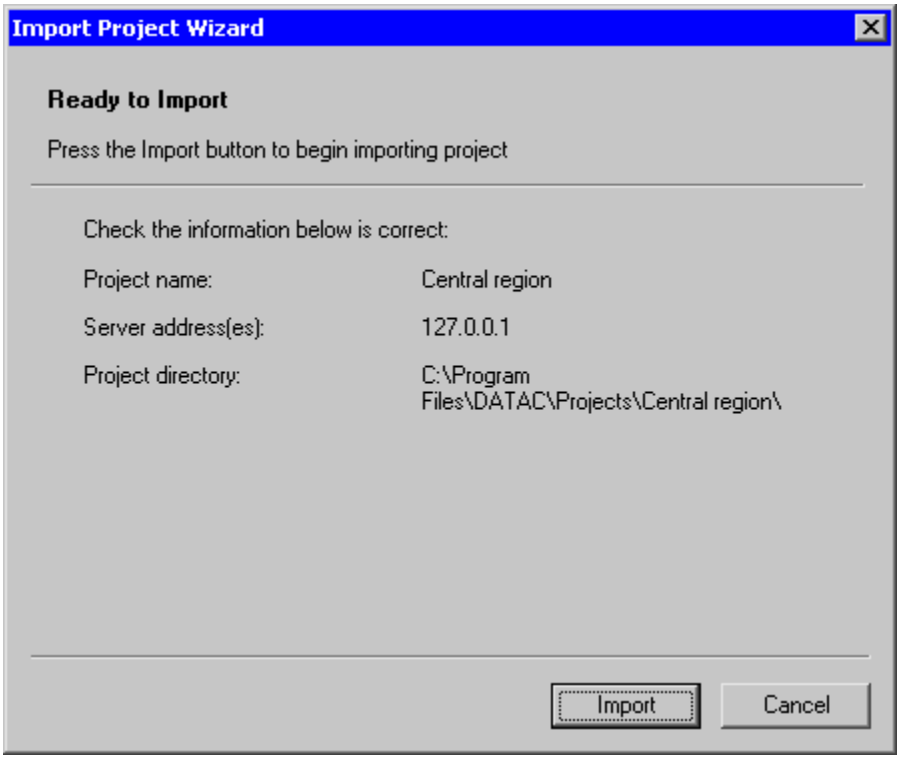
    Flex.View default menu - Flex.View will try to import the project on the RealFlex QNX system to the exact format of the Flex.View default menu.

    Existing RealFlex menu for Development Edition (Default) - Flex.View will try to import the project on the RealFlex QNX system to the exact format of the Flex.View development edition, i.e., allow database editing, password maintenance, display building.

    Existing RealFlex menu for Runtime Edition - Flex.View will try to import the project on the RealFlex QNX system to the exact format of the Flex.View runtime edition, i.e., no database editing or password maintenance or display building etc.

13. Click on the **Next>** button.

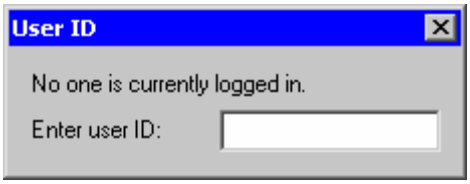
    The "Import Project Wizard - Ready to Import" window will appear:



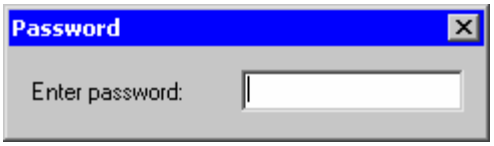
14. Check the information displayed is correct, i.e., Project name, Server address(es) and Project directory, then click on the **Import** button.

    Flex.View will make a connection to the RealFlex server and proceed to import the existing project.

    If no one is currently logged on, a "User ID" dialog box will appear:



    Enter your user ID in the "Enter User ID:" field, and press **Return**. User ID's are not echoed to the screen while being entered. A "Password" dialog box will then appear:



    Enter your password in the "Enter password:" field, and press **Return**. Passwords are not echoed to the screen while being entered.

    As the project is being imported, progress or problems are reported by the displaying of messages. Respond to these messages as required. Wait until this process has completed and the following message is displayed:

Click on the **OK** button. The "Connecting to the Server" dialog box will appear and Flex.View will attempt to connect to the Node 1 IP address. When the connection is successful, the database is updated by the RealFlex server downloading its active alarms, Historical alarms/Events and zoning information to the Flex.View PC. Any connection problems or errors are reported.

4.3.2 Connect to the Server

➔ **To connect to the RealFlex server:**

 From the **Configuration** menu, select the **Connect to the Server** option.

The "Connecting to the Server" dialog box will appear and Flex.View will attempt to connect to the Node 1 IP address.

When the connection is successful, the database is updated by the RealFlex server downloading its active alarms, Historical alarms/Events and zoning information to the Flex.View PC. Any connection problems or errors are reported.

4.3.3 Disconnect

➔ **To disconnect from the RealFlex server:**

Note: For connections to a RealFlex server, access to this option may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

 From the **Configuration** menu, select the **Disconnect** option.

A prompt will appear asking for your confirmation. Click on the **Yes** button to disconnect from the server, or click on the **No** button to abort the operation.

On selecting **Yes**, you will be disconnected from the RealFlex server. All reports, alarm listings, Communications, active alarm and historical event summaries will be frozen at the time of disconnection.

4.3.4 Check for Updates

The "Check for Updates" option allows you to manually check for updates on the RealFlex system.

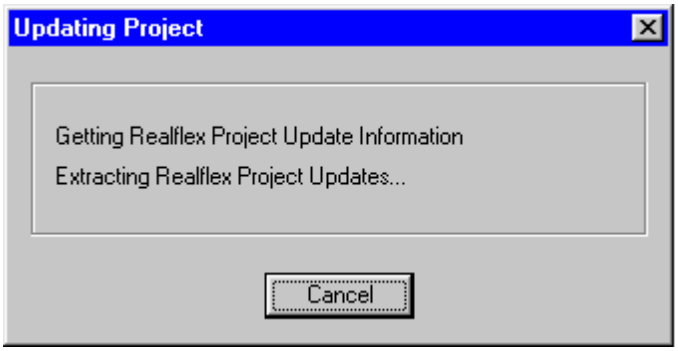
Note: If the "Check for Updates" option in the "Configuration" menu does not appear, or is grayed out, then the "Check for update automatically" check-box in the "Application" window of the "Configuration - Options" menu has not been activated (no tick in check-box).

➔ **To check for updates:**

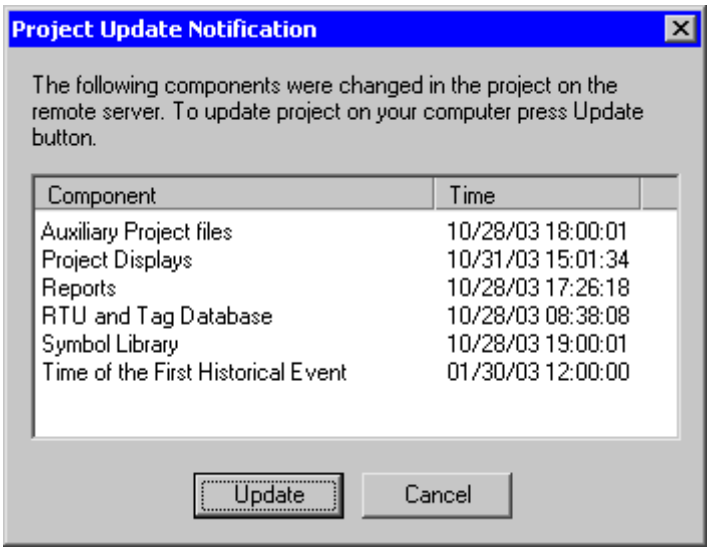
1. From the **Configuration** menu, click on the **Check for Updates** option.

   Flex.View will automatically interrogate the RealFlex server requesting information on any system updates.

   If the "Update all components silently" check-box in the "Application" window of the "Configuration - Options" menu has been activated (tick in check-box), an "Updating Project" window will appear, displaying the progress of Project components that have changed on the RealFlex server being updated on your PC.



   If the "Update all components silently" check-box in the "Application" window of the "Configuration - Options" menu has not been activated (no tick in check-box), a "Project Update Notification" window will appear, displaying a list of components which have changed on the RealFlex server since the last update.



2. Select the required components and click on the **Update** button, or click on the **Cancel** button to close window without updating. Selected system components will be updated on your PC.

4.3.5 Configuration File Editor

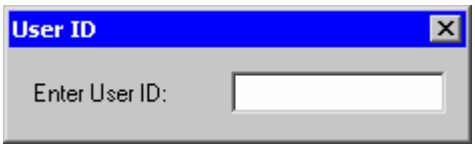
Configuration file editing can only be carried out by Flex.View users with appropriate user-level access.

In order to configure RealFlex there are some "configuration" files which need to be created or edited. The "Configuration File Editor" option allows a user to configure these files from within Flex.View or Flex.Builder. A user is able to setup his/her system totally independent of the RealFlex/QNX system.

➔ **To open the Configuration File Editor application:**

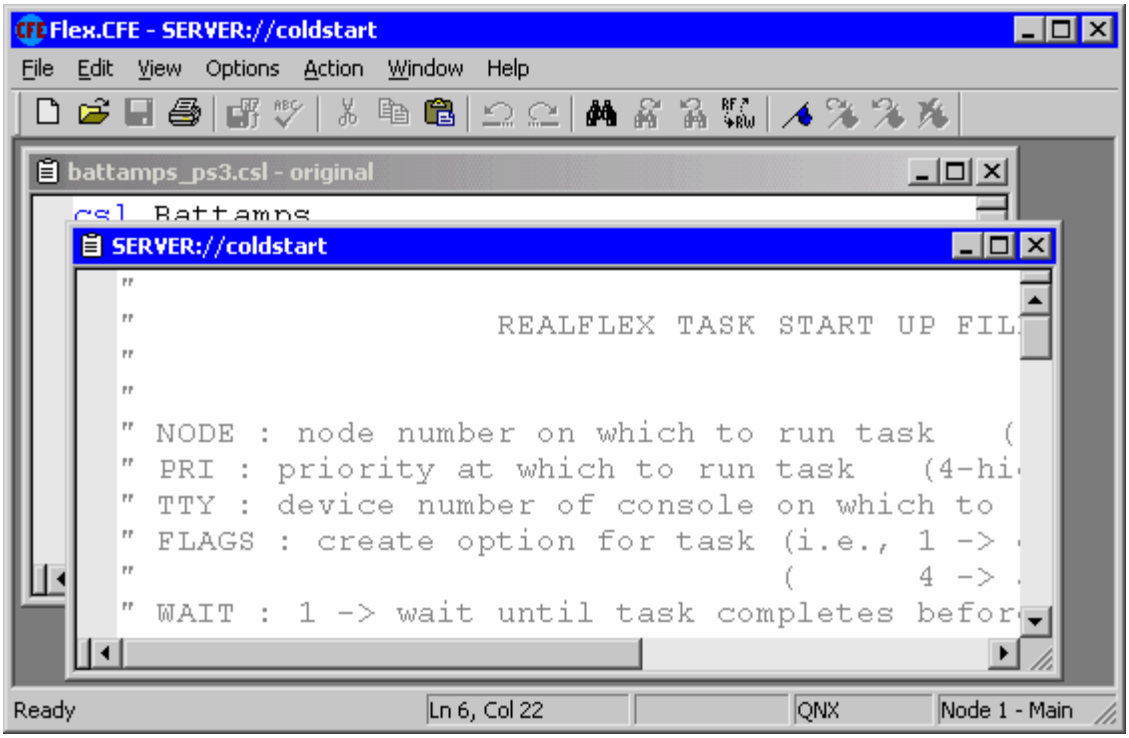
1. From the **Configuration** menu, select the **Configuration File Editor** option.

   If no one is currently logged on, the "Flex.CFE" application will automatically start to open and a "User ID" dialog box will appear:



2. Enter your user ID in the "Enter User ID:" field, and press **Return**. User ID's are not echoed to the screen while being entered.

   The "Configuration File Editor" application will then complete the opening sequence.


Flex.CFE - SERVER://coldstart
File Edit View Options Action Window Help
battamps_ps3.csl - original
csl Battamps
SERVER://coldstart
" REALFLEX TASK START UP FIL
" NODE : node number on which to run task (
" PRI : priority at which to run task (4-hi
" TTY : device number of console on which to
" FLAGS : create option for task (i.e., 1 ->
" (4 ->
" WAIT : 1 -> wait until task completes befor
Ready
Ln 6, Col 22
QNX
Node 1 - Main

For instructions on how to use the Flex.CFE application, please refer to the "Flex.CFE" Help file.

4.3.6 Historical Editor

Historical data point editing can only be carried out by Flex.View users with a Development licence and appropriate user-level access.

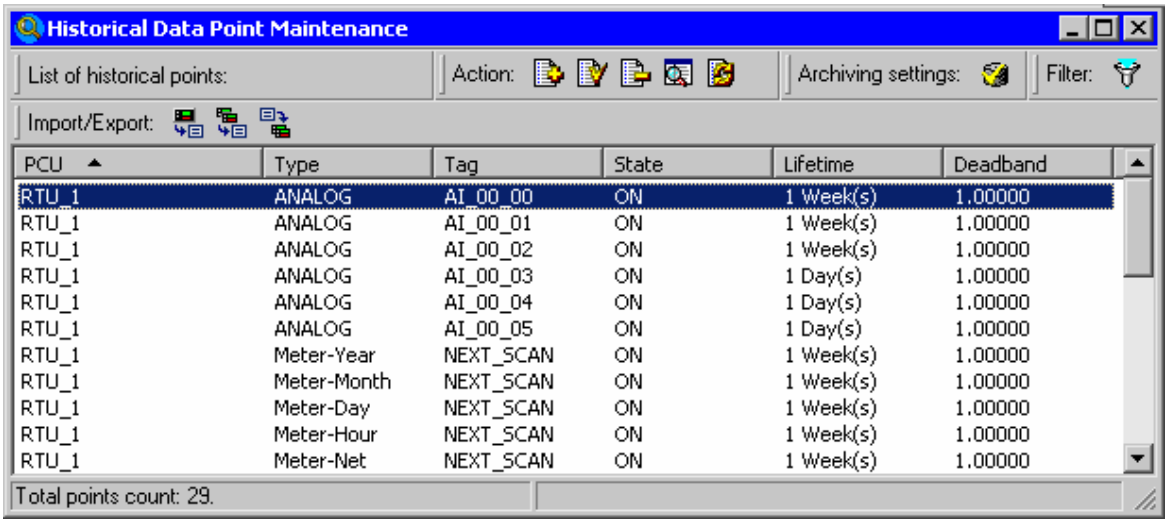
The RealFlex Historical Maintenance utility allows collection of historical data point information based on data values collected from the field or stored in pseudopoints. The collection of data is activated at system startup. The historical data collection subsystem will automatically begin the collection process upon activation of historical recording for database points placed in the Historical Maintenance utility. The Historical Editor option of the Configuration menu allows for the addition, modification, deletion, exportation or importation of database points for historical recording, as well as providing a summary of points currently in the historical record mode.

The "Historical Data Point Maintenance" window, contains all points currently designated for historical data collection listed by PCU name, database type (Analog, Meter or Status) and tag name.

➔ **To access the Historical Data Point Maintenance window:**

Note: Access to this option may be disabled or protected by a password. For information on user access levels, please refer to Section 4.3.9, “Password Maintenance“.

- From the **Configuration** menu, click on the **Historical Editor** option. The "Historical Data Point Maintenance" window will be displayed:


Historical Data Point Maintenance
List of historical points:
Action:
Archiving settings:
Filter:
Import/Export:
PCU
Type
Tag
State
Lifetime
Deadband
RTU_1 ANALOG AI_00_00 ON 1 Week(s) 1.00000
RTU_1 ANALOG AI_00_01 ON 1 Week(s) 1.00000
RTU_1 ANALOG AI_00_02 ON 1 Week(s) 1.00000
RTU_1 ANALOG AI_00_03 ON 1 Day(s) 1.00000
RTU_1 ANALOG AI_00_04 ON 1 Day(s) 1.00000
RTU_1 ANALOG AI_00_05 ON 1 Day(s) 1.00000
RTU_1 Meter-Year NEXT_SCAN ON 1 Week(s) 1.00000
RTU_1 Meter-Month NEXT_SCAN ON 1 Week(s) 1.00000
RTU_1 Meter-Day NEXT_SCAN ON 1 Week(s) 1.00000
RTU_1 Meter-Hour NEXT_SCAN ON 1 Week(s) 1.00000
RTU_1 Meter-Net NEXT_SCAN ON 1 Week(s) 1.00000
Total points count: 29.

When this window is first opened there are no data points displayed. Data points must be added or imported to this window before historical recording can take place.

When opening this window after data points have been added, in the left-hand field of the "Status bar" a message "Receiving list of historical points..." will be displayed as Flex.View receives the list of historical points from the RealFlex server.

You can update the data in the list of historical points by clicking on the button in the "Action" toolbar.

The significance of each column in the display is:

PCU - The name of the PCU.

Type - The database type, Analog, Meter or Status.

Tag - The tag name.

The following informational fields are editable from the "Historical Data Point Maintenance" window:

State - Displays the current recording state of the point, either ON or OFF.

To change the state, position the pointer over the "State" field to be edited, right-click and select "On" or "Off" from the pop-up menu. Historical data collection can be disabled (or turned "Off") without affecting the data previously collected for a point. This can be useful when a point or sensor is temporarily out of service or is generating invalid values.

Lifetime - The amount of time for which historical data is to be saved to disk. Outdated data is removed daily.

To change the numeric increment value, select the database point to be edited, then from the "Action" toolbar, click on the button. This will open the "Edit Point Maintenance" dialog box, allowing you to change the Lifetime value of the field.

To change the text increment value, position the pointer over the "Lifetime" field to be edited, right-click then select the new increment value from the pop-up menu (i.e. Day, Week, Month or Year). Changing the lifetime of a point from a day to a year will not generate a year's worth of data. However, changing the "Lifetime" from a year to a day will erase all data older than a day. The "Lifetime" field allows specification of a maximum of 999 days, 260 weeks, 60 months or 5 years.

Note: Once the lifetime is shortened, historical data prior to the new lifetime is immediately removed and is unrecoverable.

Deadband - The associated filter for the point (i.e., the value reported to historical collection must change by more than this amount in order to be saved in the historical data set): For Analog points, the entry is used as a minimum change in percentage of full EU scale. For Meter points, the entry is used as a minimum raw count change. For Status points, the "Deadband:" field is not applicable as all changes of state are recorded.

To change the "Deadband" of a point, position the pointer over the "Deadband:" field to be edited, then right-click. This will open the "Edit Point Maintenance" dialog box, allowing you to change the deadband value of the field.

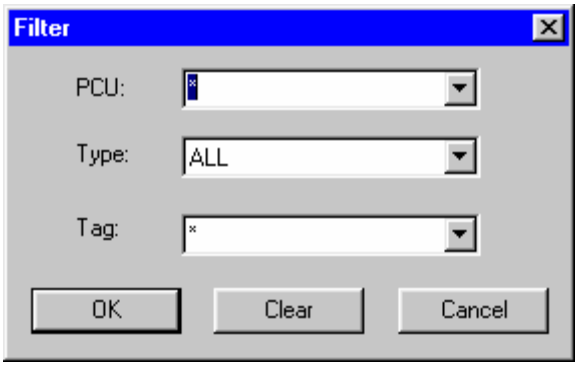
Status bar - The "Status bar" at the bottom of the window displays the total number of points currently defined in the Historical Maintenance listing.

➔ **To filter the display:**

The Filter option allows viewing of a subset of Historical datapoint definitions sorted by PCU Name, database type and/or Tagname.

1. From the "Filter" toolbar, click on the button.

   The "Filter" dialog box will appear:



2. To filter by PCU name, in the "PCU" field enter the PCU name, (Wildcards may be used), or click on the button and select required PCU from the drop-down list.

   To filter by database type, click on the button to the right of the "Type:" field and select required type from the drop-down list.

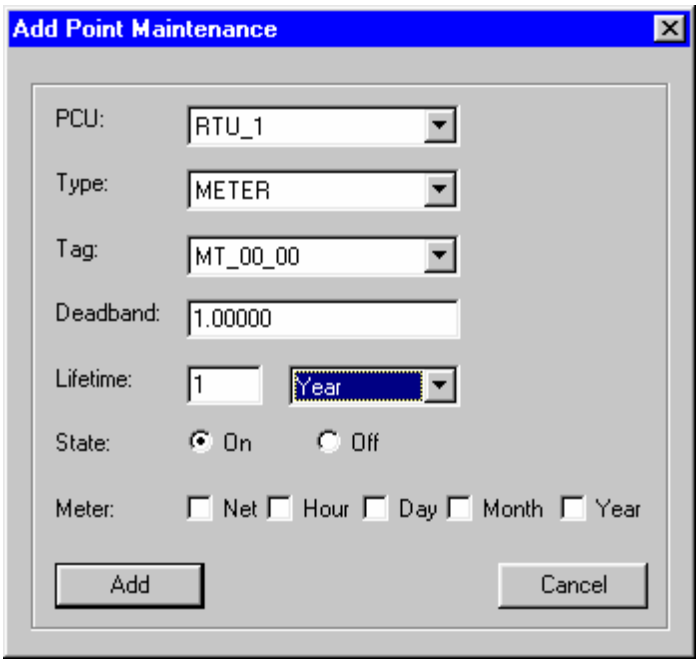
   To filter by tag name, in the "Tag:" field enter the tag name, (Wildcards may be used), or click on the button and select required Tag from the drop-down list.

3. Once all selections have been made, click on the **OK** button. This will return you to the "Historical Data Point Maintenance" window and will display all historical database definitions that match the selected criteria.

   To clear all selections and reset the form to "show all" (denoted by an asterisk "*" in the PCU and Tag fields and an "ALL" in the Type field), click the on **Clear** button. To exit without making any changes, click the on **Cancel** button.

4.3.6.1 To add a historical point

1. From the "Action" toolbar, click on the button. The "Add Point Maintenance" dialog box will appear:



2. Click on the button to the right of the "PCU:" field and select required PCU from the drop-down list of currently defined PCUs for the system.

3. Click on the button to the right of the "Type:" field and select required Type from the drop-down list (Analog, Meter or Status).

4. Click on the button to the right of the "Tag:" field and select required Tag name from the drop-down list of all currently defined tag names for the selected PCU and Type. The drop-down list will only include tag points that are not already included in the list of historical points.

5. In the "Deadband:" field, enter a value to set the filter for the point before data is saved in historical collection. The minimum allowable value for this field is "0.00001". Analog and Meter points only.

   For analog points, the entry is used as a minimum change in percentage of full EU scale (Max EU - Min EU). For meter points, the deadband represents a minimum raw count change. If the "Type" selected is "Status," the deadband field is not used. All changes in "Status" data values will automatically be recorded for any change of state.

   Note: Keep in mind the defined deadband for your I/O Driver (the [-f] "Analog deadband value" parameter) when defining the deadband for your historical record. The deadband in the "Historical Data Point Maintenance" window does not have to match the deadband defined for your I/O Driver, but if the deadband set is greater/smaller than the deadband for the I/O Driver, you may be losing data you wish to save or attempting to save more data than you are actually collecting from the field device.

6. The "Lifetime:" entry consists of two fields. The first field specifies the numerical count that will apply to the second field which allows specification of Days, Weeks, Months or Years.

   The two fields define the amount of time for collection. The "Lifetime" field allows specification of a maximum of 999 days, 260 weeks, 60 months or 5 years.

7. The "State:" signifies whether data associated with the point is currently in historical collection. If "On", historical data collection will begin for the defined point. If "Off", no historical data will be collected.

8. If a Meter type was selected, the "Meter:" line option boxes will become active. This allows selection of the type of meter data to be collected. The options are "Net," "Hour", "Day", "Month" and "Year". All meter types can be added during the add process but must be edited separately.

9. After all fields have been assigned, click on the **Add** button. The record will be saved and a message "Point (PCU name:Tag name) added successfully." will appear. Click on the **OK** button to return to the "Historical Data Point Maintenance" window.

4.3.6.2 To delete a historical point

1. In the "Historical Data Point Maintenance" window, select database point(s) to be deleted.

2. From the "Action" toolbar, click on the button. You will be prompted to confirm the deleting the database point(s) with a "OK/Cancel" selection. Click on the **OK** button to continue, or click on the **Cancel** button to abort the operation.

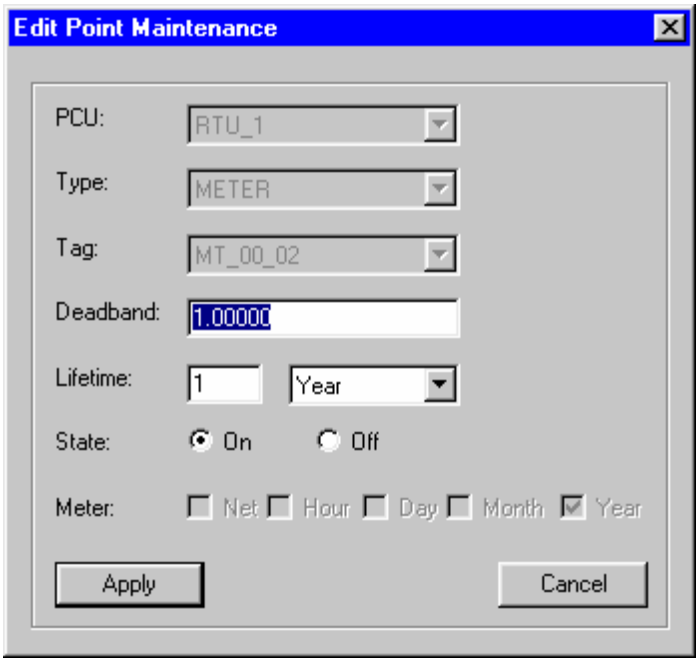
   Note: If a point is deleted, all associated historical information is also deleted. If you confirm deletion of a point (and the associated historical data) there is no recovery method for retrieving associated historical data.

4.3.6.3 To edit a historical point

The only fields accessible while in Edit mode are "Deadband", "Lifetime" and "State".

1. From the "Historical Data Point Maintenance" window, click on and highlight database point to be edited.

2. From the "Action" toolbar, click on the button. The "Edit Point Maintenance" dialog box will appear:



3. Edit fields as required.

   Note: If the time in the "Lifetime:" field is decreased, all historical information prior to the new time span designation will be lost. For example, if the lifetime of a point is one year, and is changed to one day, all information prior to one day will be deleted.

   Once the lifetime is shortened, historical data prior to the new lifetime is immediately removed and is unrecoverable.

4. After you have edited required fields, click on the **Apply** button to save your changes, or click on the **Cancel** button to abort the operation.

   If you selected "Apply", a message "Point (PCU name:Tag name) changed successfully." will appear. Click on the **OK** button to return to the "Historical Data Point Maintenance" window.

4.3.6.4 To import/export data points to a CSV file

You can export and import lists of Historical data points to/from a Microsoft Excel CSV file. This is used by the system administrator to create a number of different data point groups for the collection of historical information.

For example, you may have a number of water treatment plants where you want to monitor the chlorine levels. You would build up a list of the data points associated with the first plant, then save the list to a CSV file. You can then delete the first list of data points, add the data points associated with the second plant, then save this new list to a second CSV file. Once you have built up a library of CSV files, you can then imported each list of data points into the "Historical Data Point Maintenance" window as and when required.

Note: When a point is exported, all associated historical information is lost except for the last record. If you want to save the recorded historical information, before you export the point(s), copy retrieved data to the Clipboard then paste it into another application. See "To copy retrieved data to the clipboard" below.

➔ **To save selected data point(s) to a CSV file:**

1. Click on and highlight the data point(s) to be saved as a CSV file.

   To select a single point, click on and highlight the point.

   To select a group of points that are next to each other, click on and highlight the first point of the group, hold down the **Shift** key then scroll down the list and select the last point of the group.

   To select individual points which are not next to each other, hold down the **Ctrl** key, then select each point as required.

2. From the Import/Export toolbar, click on the button. The "Save as CSV file" dialog box will appear.

3. Indicate the location and the name of the file to be exported, the file name can differ from the default name entered, then click on the **Save** button. The "Save as type" will always be "CSV File (*.csv)".

   You will be returned to the "Historical Data Point Maintenance" window.

➔ **To save all data points to a CSV file:**

1. From the Import/Export toolbar, click on the button. The "Save as CSV file" dialog box will appear.

2. Indicate the location and the name of the file to be exported, the file name can differ from the default name entered, then click on the **Save** button. The "Save as type" will always be "CSV File (*.csv)".

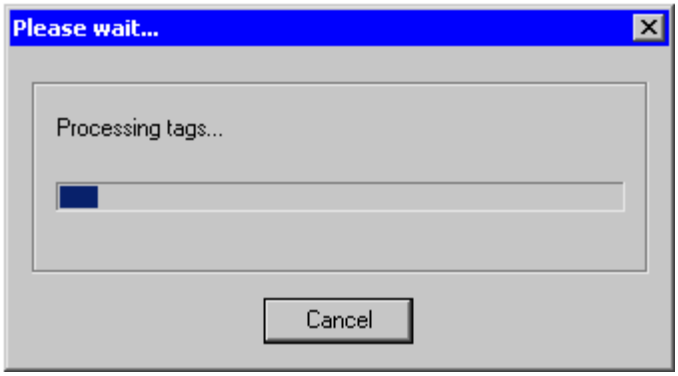
   You will be returned to the "Historical Data Point Maintenance" window.

➔ **To import a CSV file into the Historical Editor:**

1. From the Import/Export toolbar, click on the button. The "Import CSV file" dialog box will appear.

2. Locate the file to be imported, then click on the **Open** button. The "Files of type" will always be "CSV File (*.csv)".

   A window will appear, displaying the import progress:

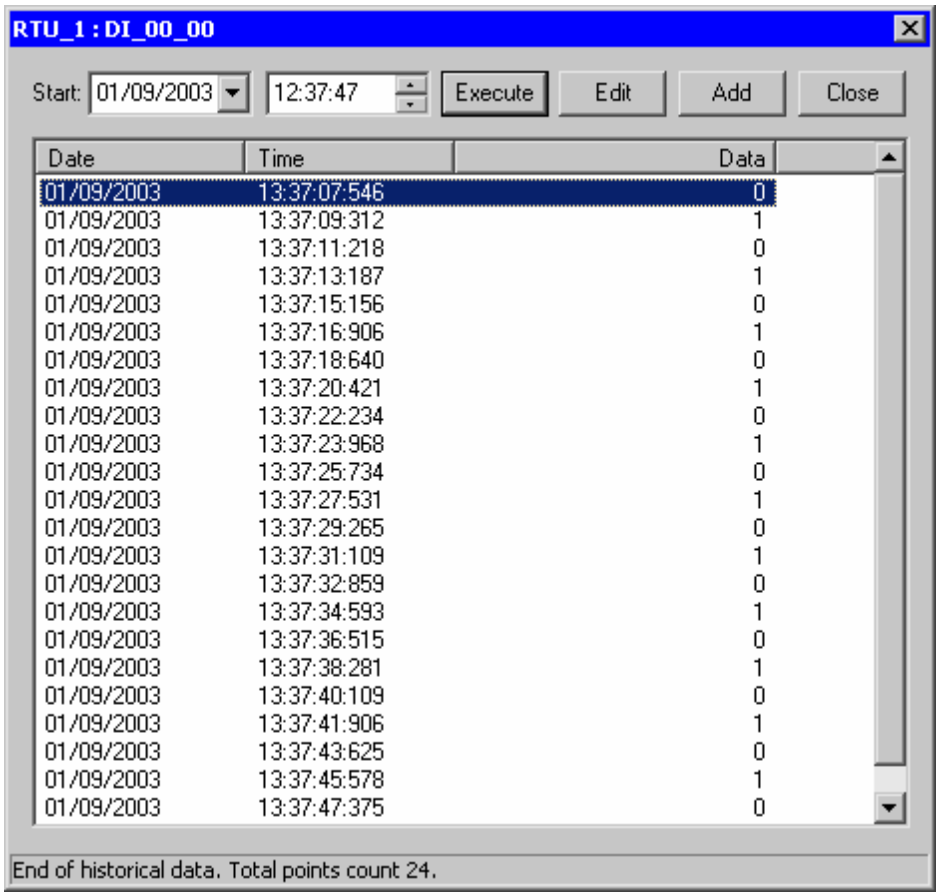


After the data points have been imported, you will be returned to the "Historical Data Point Maintenance" window.

4.3.6.5 To view historical data

The contents of the historical collection database can be viewed through the use of the "View" function. Select the database point you wish to view by either right-clicking on the PCU or the Type field, or by clicking on and highlighting the database point you want to view, then from the "Action" toolbar, click on the button.

When either of these methods is used, the following window will be displayed. The title bar will display the PCU and tag name:



Across the top of this window you have the following fields and buttons:

Start: - The "Start:" entry consists of two fields. The first field specifies the date and the second field specifies the time. These two fields are used to designate the time span of the records to be viewed, beginning with the date and time designated in these fields and ending with the current time. When opening this window, the current time is displayed in these fields.

Execute - Used to extract historical data values collected over the time span defined for the point.

Edit / **Add** - Used when there is a malfunction in the system or a genuine misrepresentation of data. For example, if you have an RTU monitoring a reservoir level over a period of a week and for some reason it was turned off for one day, you would get a reading of zero for the level on that day. When a graph for the week is produced you can see that there is an obvious error. The average is also severely effected. To correct the graph and average reading you can edit the value of zero or enter a correct reading (average reading) in its place.

Close - This will exit the "View" utility and return you to the "Historical Data Point Maintenance" window.

➔ **To view data values:**

1. In the "Start:" Date and Time fields, set the time back to the time you would like to start viewing historical data. For details, please refer to Section 1.7.13.

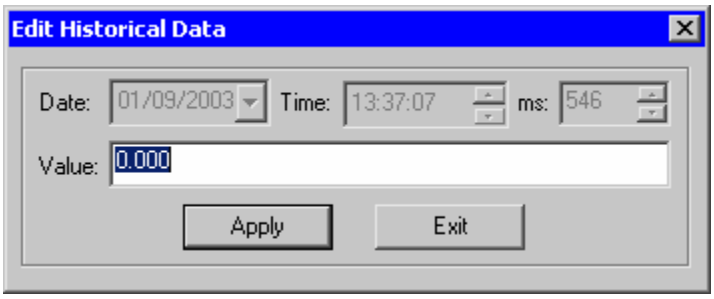
2. When the time span has been entered, click on the **Execute** button. Flex.View will extract the requested historical data from the RealFlex server and display the information in the "View" window in the Date, Time and Data columns.

   If there is no data available for the requested period, no data will be presented in the "View" window and the Execute button will become active again.

➔ **To edit a Historical record:**

1. Click on and highlight the record to be edited.

2. Click on the **Edit** button, or right-click, then select the **Edit Historical Data** option from the pop-up menu. The "Edit Historical Data" dialog box will appear:

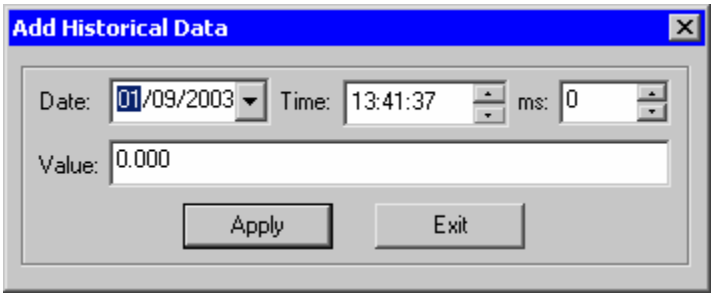


3. In the "Value:" field, edit the value, then click on the **Apply** button.

   You will be returned to the "View" window where the revised value for the selected record will be displayed.

➔ **To add a Historical record:**

1. Click on the **Add** button, or right-click, then select the **Add Historical Data** option from the pop-up menu. The "Add Historical Data" dialog box will appear:



2. In the "Date:", "Time:" and "ms:" fields, set the date and time as required. For details, please refer to Section 1.7.13.

3. In the "Value:" field, enter the required value, then click on the **Apply** button. The new record will be displayed in the "View" window.

4. Click on the **Exit** button to close the "Add Historical Data" dialog box.

➔ **To copy retrieved data to the clipboard:**

The historical data retrieved can be copied to the clipboard as plain text and pasted into another application, (e.g., WordPad, Excel etc.).

1. Select data to be copied. To select a single record, click on and highlight the record.

   To select a group of records that are next to each other, click on and highlight the first record of the group, hold down the **Shift** key then scroll down the list and select the last record of the group.

   To select individual records which are not next to each other, hold down the **Ctrl** key, then select each record as required.

   To select all records, right-click, then select the **Select All** option from the pop-up menu.

2. With the selected records highlighted, right-click, then select the **Copy to clipboard** option from the pop-up menu.

   The selected records will be copied to the clipboard ready for pasting into another application.

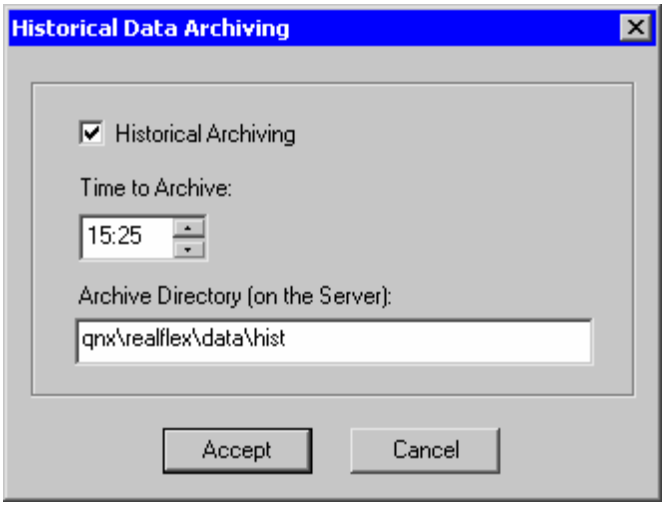
4.3.6.6 Historical Data Archiving

On the RealFlex server, Historical Data Archiving splits your large "oldhdata" file (contains all historical records) into monthly chunks. It creates a new "oldhdata" file with a time span of X months, i.e., three months. Every month the Archive function adds your historical data to your new "oldhdata" file. This file will always have a time span of three months or less. This is very useful if you have large historical archives. You can store all but the most recent historical data on the network and still have complete access to this data.

When a user does a historical request of two years on a particular point, the data is retrieved from the smaller files that have been created and stored on the network as well as the information in the new "oldhdata" file.

➔ **To archive Historical data:**

1. From the "Historical Data Point Maintenance" window, click on the button. The "Historical Data Archiving" dialog box will appear:



2. Click on the "Historical Archiving" check-box. A tick will appear when enabled. Click again to disable (no tick).

3. In the "Time to Archive" field, set the time of day that you want to archive. Either click on and highlight the portion of the time and type in the required time. Shown in the format HH/MM, or click on and highlight the portion of the time and use the spinner buttons to select the required time.

4. The default archive directory name on the RealFlex server is displayed in the field at the bottom. There would normally be no reason to change this directory path.

5. After you have set archiving parameters, click on the **Accept** button, or click on the **Cancel** button to abort the operation.

   Historical data will be archived at the time specified.

4.3.7 Report Generator

The "Report Generator" option from the "Configuration" menu allows you to create a new report or edit an existing report file using the Flex.Report application program.

Note: Access to this option may be disabled or protected by a password. For details on user level access, please refer to Section 4.3.9, “Password Maintenance“.

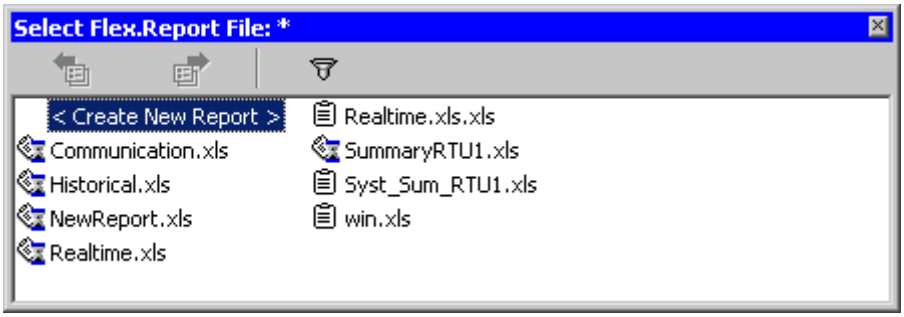
To view or run an existing report, please refer to Section 4.1.3.1, "User report".

➔ **To view a list of reports:**

For Microsoft Windows look and feel:

- From the **Configuration** menu, click on the **Report Generator** option.

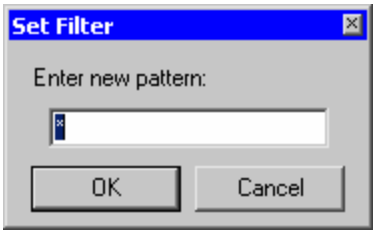
  The "Select Flex.Report File: *" window appears displaying the "< Create New Report >" option and listing all reports available for the project, sorted alphabetically by name.



If all selections are not shown and the window is full, clicking on the buttons located in the toolbar will scroll the list left or right to the desired name. You can also use the scroll bar if the required report name is not visible.

➔ **To locate a specific name:**

1. Click on the button. The "Set Filter" dialog box will appear:



2. Enter a text string to search for. For example, if you wanted to locate all reports with "xyz" in the name, you would enter "*xyz*" and click on the OK button.

   The "Select Flex.Report File" window will change to list only those reports containing "xyz" in the name.

Current state of Reports:

In the "Select Flex.Report File: *" window, a symbol to the left of the report name signifies the current state of the report. Symbols are as follows:

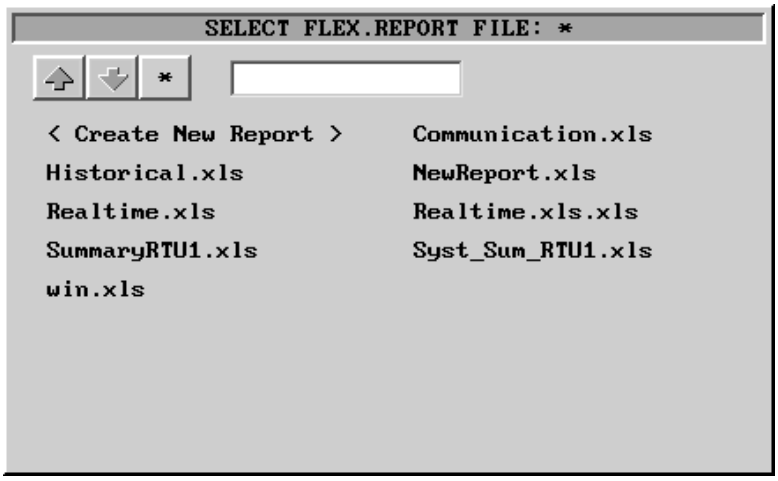
Report is as registered on the RealFlex server.

Report is a draft or has been edited, but not yet registered on the RealFlex server. For details on how to send files to the RealFlex server, please refer to Section 4.3.8, "Send Flex.Report File to the Server".

For RealFlex look and feel:

- From the **Configuration** menu, click on the **Report Generator** option.

  The "Select Flex.Report File: *" window appears displaying the "< Create New Report >" option and listing all reports available for the project, sorted alphabetically by name.



If all selections are not shown and the window is full, clicking on the buttons located in the upper left corner of the window will scroll the list one page up or down to the desired report.

➔ **To locate a specific report:**

- Click on the asterisk (*) button and enter a text string to search for.

  For example, if you wanted to locate all reports with "xyz" in the name, you would enter "*xyz*" and press **Enter**. The "Select Flex.Report File: *" window will change to list only those reports containing "xyz" in the name.

  You may also choose to simply type the name (or first letters of a name) from the keyboard. A box will appear around the closest matching name.

➔ **To create a new report or edit an existing report:**

- To create a new report, click on **< Create New Report >.** To edit an existing report, click on the required report name.

  The Microsoft Excel application will automatically open. A new menu option called "Datac" will be added to the Microsoft Excel menu bar. The title bar will also change to display "Microsoft Excel - NewReport" for a new report, or "Microsoft Excel - [report name]" for an existing report.

  When creating a new report, Flex.Report initially starts in "Edit" mode.

  When editing an existing report, Flex.Report initially starts in "Work" mode, the "Connecting To RealFlex Server" dialog box will appear and Flex.Report will attempt to connect to the Node 1 IP address for the Project. When the connection is successful, live data is downloaded from the RealFlex server. Any connection problems or errors are reported.

For instructions on how to create or edit a report, please refer to the "Flex.Report" Help file.

Reports generated by Flex.Report are saved as Microsoft Excel .xls files in the "C:\Program Files\Datac\Projects\[Name of Project]\setup\win\rg\win\draft" directory until they are sent to the RealFlex server. To send files to the RealFlex server, please refer to Section 4.3.8, "Send Flex.Report File to the Server".

The name of the saved report is added to the list of defined reports in the "Select Flex.Report File: *" window and the "Select report to demand" list in the "Demand Reports" window.

4.3.8 Send Flex.Report File to the Server

The "Send Flex.Report File to the Server" option allows a user to register new and edited Flex.Report files on the RealFlex server.

Draft reports are stored in the "C:\Program Files\Datac\Projects\[Name of Project]\setup\win\rg\win\draft" directory.

➔ **To send Flex.Report files to the RealFlex server:**

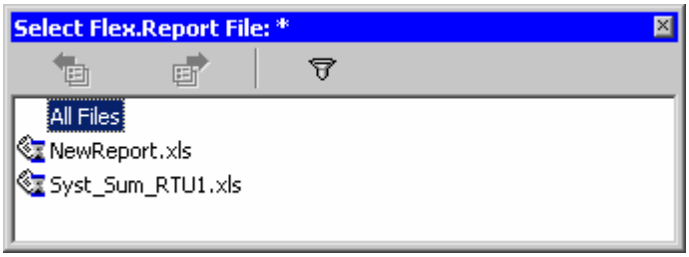
Note: Access to this option may be disabled or protected by a password. For details on user level access, please refer to Section 4.3.9, “Password Maintenance“.

1. From the **Configuration** menu, click on the **Send Flex.Report File to the Server** option.

   If there are no draft reports available for sending, the message "Draft folder is empty" will be displayed.

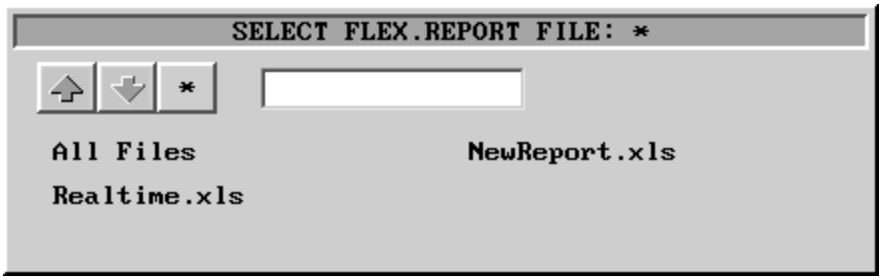
   If there are draft reports available for sending, the "Select Flex.Report File: *" window will appear listing all draft reports that are not yet registered on the RealFlex server, sorted alphabetically by name:

   For Microsoft Windows look and feel:



   If all selections are not shown and the window is full, clicking on the buttons located in the toolbar will scroll the list left or right to the desired name. You can also use the scroll bar if the required report name is not visible.

   For RealFlex look and feel:



   If all selections are not shown and the window is full, clicking on the buttons located in the upper left corner of the window will scroll the list one page up or down to the desired report.

2. Click on required report name, or click on "All Files" if you want to send all the reports.

   The "Draft Files Modification" window will appear, displaying the progress of the report(s) being sent to the RealFlex server. Any connection problems or errors are reported.

   When the Flex.Report file(s) have been successfully registered on the RealFlex server, a symbol will be displayed to the left of the report name in the "Microsoft Windows look and feel - Select Flex.Report File" window.

4.3.9 Password Maintenance

It is important to keep your system secure, not only to protect data on the computer itself, but on the SCADA system as well. A good security system confirms the identity of the people who are attempting to access the resources, protects specific resources from inappropriate access by users, and provides a simple, efficient way to set up and maintain security on your system.

RealFlex employs two different methods of applying user and password security:

Standard security (Default): allows User IDs to be added, changed or removed from the system and to allow certain Flex.View functions to be selectively enabled, disabled or secured by a password for each user.

For details on how to use the "Password Maintenance" feature, please refer to Section 4.3.9.1, "Password Maintenance (Standard security)".

Enhanced security: allows User Groups and User IDs to be added, changed or removed from the system and to allow certain Flex.View functions to be selectively enabled, disabled or secured by a password at a user group level.

For details on how to use the "Password Maintenance" feature, please refer to Section 4.3.9.2, "Password Maintenance (Enhanced security)".

Note: The Enhanced security system was introduced as an option for systems using the RealFlex4.3I software in combination with the Flex.Serv V8.23 application software.

4.3.9.1 Password Maintenance (Standard security)

The Password Maintenance window, as shown below, allows User IDs to be added, changed or removed from the system and to allow certain Flex.View functions to be selectively enabled, disabled or secured by a password for each user.

Using the Password Maintenance window, up to two hundred (200) separate users can be given individually specified access to the various Flex.View options and features that can be password protected.

To begin Password checking, the user must initiate the User Logon/Logoff sequence. After entering a valid USER ID, the user is said to be logged on, and the passwords associated with that USER ID remains active until one user logs off or another user logs on, even if the system is rebooted. User logon activities are printed with events on the Alarm Printer.

➔ **To access the Password Maintenance window:**

Note: Access to this option may be disabled or protected by a password. See "To set/change user access level" below for information on user access levels. If access has been disabled, users will only be able to view their assigned levels of access to certain Flex.View functions.

- From the **Configuration** menu, select the **Password Maintenance** option.

  The "Password Maintenance" window will be displayed:

This window displays a list of users with an expandable/collapsible hierarchy of Flex.View functions (See table below) that can be selectively enabled, disabled or secured by a password. When a new user is added, these functions are initially set to "Access disabled".

In the hierarchy list of users, click on the (+) symbol to the left of the user name to show the list of Flex.View functions. In this list a symbol is placed to the left of the function to signify its current access level. The significance of these symbols are:

= Access without password.

= Password required.

= Access disabled.

When you first call up the "Password Maintenance" window, the program will prompt you for a user ID to select or to create a new user.

Flex.View functions:

Function	Controls access to:
Database builder	The "Database Editor" option from the "Configuration" menu.
CRT related utilities	The "Send Flex.Report File to the Server" option from the "Configuration" menu.
Send controls	Sending Controls to a controllable device.
Server exit	Not used in Flex.View.
User functions	The "User Functions" window from the "Configuration - Options" menu.
Demand reports	The "Demand Reports" options from the "Main" menu.
Edit scratch pad	Not used in Flex.View.
Edit password file	The "Password Maintenance" option from the "Configuration" menu.
Historical data maintenance	The "Historical Editor" option from the "Configuration" menu.
Set date/time	The "Set Server Time/Date" option from the "Utilities" menu.
Report generator	The "Report Generator" option from the "Configuration" menu.
Manual overwrite	To manually correct the value or state of the database point associated with the poke point.
Alarm disable	To disable alarming for a selected point.
Exit FlexView	The "Exit Flex.View" option from the "Main" menu.

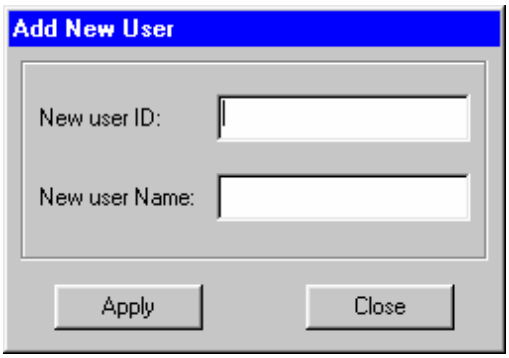
➔ **To select a user:**

- Move the pointer over the list of user names in the hierarchy. The pointer will change to a hand and the selected user name will be underlined and change to blue, click to select.

➔ **To create a new user:**

1. Click on the

button. The "Add New User" dialog box will appear:



2. In the "New user ID:" field, enter a user ID, maximum of twelve (12) alphanumeric characters without spaces. This will be the name that the user enters when Logging on.

3. In the "New user Name:" field, enter the name for the user, maximum of twenty (20) characters including spaces. This is usually the name of the employee to whom the user ID is assigned.

4. Click on the **Apply** button. You will be returned to the "Password Maintenance" window where the new user (ID and name) will have been added to the list.

5. If required, set user access properties for the Flex.View options as shown below.

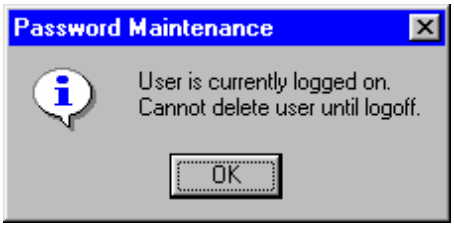
➔ **To remove a user:**

 Click on and highlight the user name to be deleted, then click on the

button.

A message, "Are you sure you want to permanently delete user (User name)?" will appear. Click on the **OK** button to confirm deletion of the User ID or click on the **Cancel** button to abort the operation.

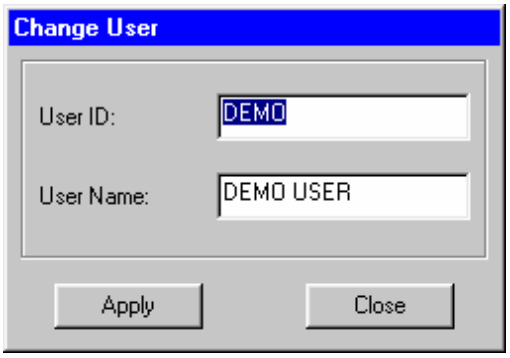
If you try to remove your own logged on user ID, the following message will be displayed:



➔ **To change a user ID:**

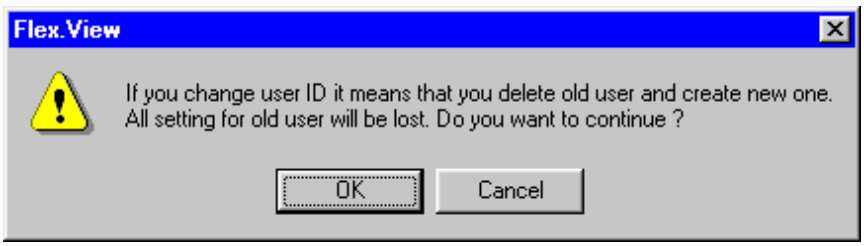
1. Click on and highlight the user name to be changed, then click on the

button. The "Change User" dialog box will be displayed:



2. Change the User ID and User Name by typing over the existing names in the "User ID:" and "User Name:" fields.

3. Click on the **Apply** button. If you changed the "User ID", the following dialog box will appear asking you for confirmation. Click on the **OK** button to continue with changing the User ID or click on the **Cancel** button to abort the operation.


Flex.View
If you change user ID it means that you delete old user and create new one.
All setting for old user will be lost. Do you want to continue ?
OK
Cancel

Flex.View will communicate with the RealFlex server to change the User ID in the RealFlex database.

You will be returned to the "Password Maintenance" window where the new user (ID and name) will have replaced the existing name in the list.

4. If required, change user access properties for the Flex.View options as shown below.

➔ **To set/change user access level:**

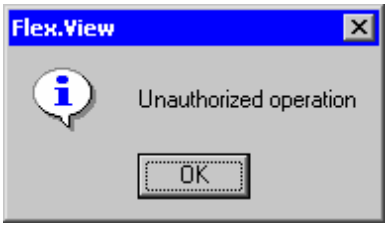
1. In the hierarchy of Flex.View functions, double click on the required function or click on and highlight required function then click on the Change access button, the "Change Access for..." dialog box will appear:

2. Select required option by clicking on the appropriate option box. Three choices are available:

Access without password - Unrestricted access to the user.

Need password - To make a feature available to the user by the entry of a password, but unavailable to others who might be present while he/she is logged on.

Access disabled - To make a feature unavailable to the user. When a menu option is disabled, the user will not be able to see this function or it may be grayed out in the Flex.View menus. When a Dynamic Display Control function is disabled, the following message will be displayed when the user tries to access the function:



In order to maintain system security, the System Administrator will need to disable access to the "Edit password file" function for all users.

If you want to use the same user access control for all the Flex.View functions, click on the **For All** button.

If you select "Need password", the "Password:" and "Confirm password:" fields will become active as shown below.

Enter a password in the "Password:" field, then re-enter the password in the "Confirm password:" field. Maximum of ten (10) alphanumeric characters without spaces. The password will not be echoed to the screen while being entered.

When you enter or change a password, write it down and keep it in a secure place and tell only the designated user the password.

3. After selecting required access option, click on the **Apply** button or click on the **Close** button if you do not want to make any changes.

   You will be returned to the "Password Maintenance" window where the symbol to the left of the Flex.View function will have changed to reflect your choice.

To exit the "Password Maintenance" window, click on the button in the top right-hand corner of the window.

4.3.9.2 Password Maintenance (Enhanced security)

The Password Maintenance window, as shown below, allows User groups and User ID's to be added, changed or removed from the system and to allow certain Flex.View functions to be selectively enabled, disabled or secured by a password for each group.

Using the "Password Maintenance" window, up to thirty two (32) separate user groups can be given individually specified access to the various Flex.View functions and features that can be password protected. The number of users that can be assigned to user groups is unlimited.

To begin Password checking, the user must initiate the User Logon/Logoff sequence. After entering a valid User ID and password, the user is said to be logged on, and the password associated with that User ID remains active until one user logs off or another user logs on, even if the system is rebooted. User logon activities are printed with events on the Alarm Printer.

The Flex.View enhanced security system offers the following security features:

Group accounts: Users must have certain user rights and permissions to perform tasks from within Flex.View. Group accounts help you efficiently assign those user rights and permissions to users. Flex.View comes with a built-in Administrators group where users of that group have full access and control for password maintenance. User groups should be added by the Administrator and operators (User accounts) should be added to the user groups. Assigning users to user groups gives most users all of the user rights and permissions they need to perform their jobs.

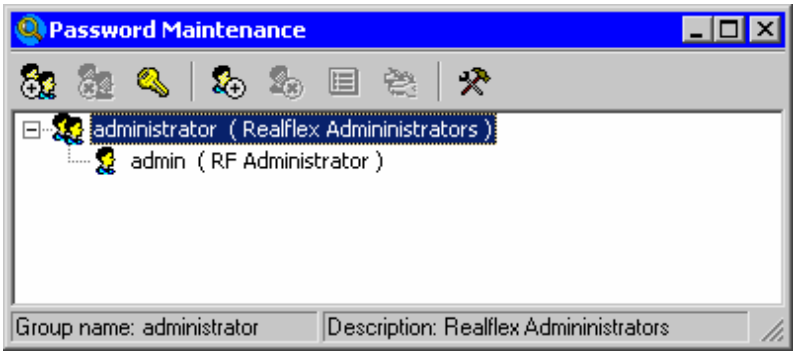
User accounts: To use a computer that is running Flex.View, users must have a user account, which consists of a unique User ID, User name and password. Flex.View verifies your User ID and password when you logon to Flex.View. If your user account has been disabled, locked out or deleted, Flex.View prevents you from accessing the SCADA system, ensuring that only valid users have access to the SCADA system.

➔ **To access the Password Maintenance window:**

Note: Access to this option may be disabled or protected by a password. See "To set/change user access level" below for information on user access levels. If access has been disabled, users will only be able to view their assigned levels of access to certain Flex.View functions and to change their own password.

- From the **Configuration** menu, select the **Password Maintenance** option.

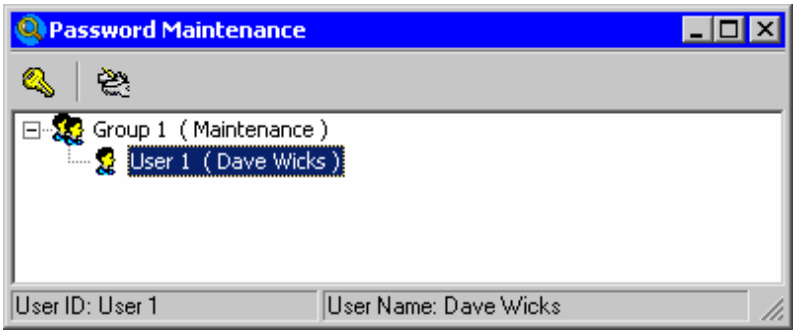
  If you are signed on as a member of the Administrator group or a user having full access rights to this option, the following "Password Maintenance" window will be displayed:



  This window displays a list of user groups with an expandable/collapsible hierarchy of users assigned to the group.

  Group names with a (+) symbol to the left of them can be expanded to show all users assigned to that group. Clicking the (-) symbol next to a Group name will collapse the item and hide the list of users.

  If you are signed on as a member of any User group and access to this option has been disabled, the following "Password Maintenance" window will be displayed:



  This window will only display your assigned user group and your own User ID. From this window you will only be able to view the access rights for your group or to change your own password.

By default, the first time this window is accessed, the "Administrator" group and the "RF Administrator" user is already configured. It is recommended that this built-in Administrator group and account should not be removed or disabled.

➔ **To select a user:**

1. Click on the (+) symbol to the left of the group name to show the list of users assigned to that group.

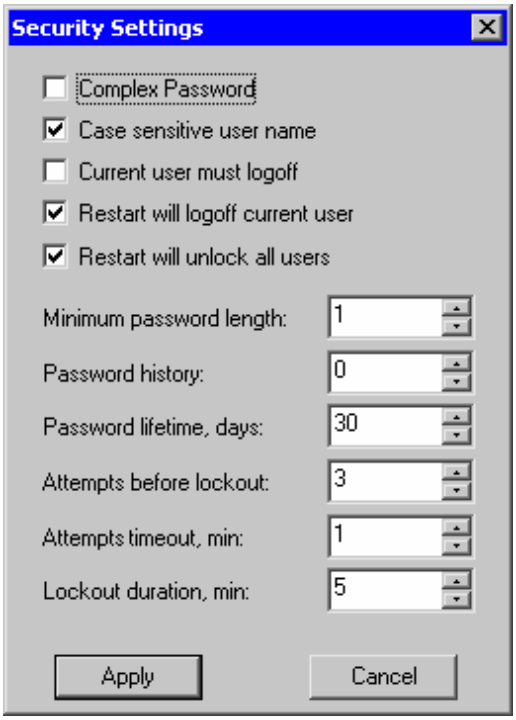
2. Move the pointer over the list of user names in the hierarchy. The pointer will change to a hand and the selected user name will be underlined and change to blue, click to select.

➔ **To define Security Settings:**

This option is used to define the security settings for all groups and their assigned users.

1. Click on the button.

   The "Security Settings" dialog box will appear:



2. In the top section of this dialog box, selected required security options by clicking on required check-box(es) to toggle between active and non-active. A tick will appear when active.

   Options are:

   Complex Password: When this option is active, user passwords must not contain the users name and must contain characters from each of the following three groups:

Description	**Examples**
Letters (uppercase and lowercase)	A, B, C,...; a, b, c,...
Numerals	0, 1, 2, 3, 4, 5, 6, 7, 8, 9
Symbols (all printable characters not defined as letters or numerals)	` ~ ! @ $ % ^ & * ( ) _ + - = { } | [ ] \ : " ; ' < > ? , . /

   See also Creating Strong Passwords.

Case sensitive user name: When this option is active, user ID's will be case-sensitive. When you assign the user ID, users must type the same capitalization when they enter their user ID at logon.

Current user must logoff: When this option is active, the user must logoff by typing his/her own user ID and password before another user can logon.

Restart will logoff current user: When this option is active, if the main node is restarted/rebooted, then all currently logged on users will be logged off the system.

Restart will unlock all users: When this option is active, if the main node is restarted/rebooted, then all locked out users will be unlocked.

3. In the bottom section of this dialog box, set parameters for each security option.

   Options are:

   Minimum password length: Defines the minimum number of characters that must be used in a password. May be set from between 1 and 25. (Default 7).

   Password history: Specifies the password history depth. Up to four passwords can be remembered to avoid reusing the same password. May be set from between 0 and 4. (Default 4).

   Password lifetime days: Defines the number of days before the current password expires. May be set from 0 to 36500 days. (Default 180). If set to 0 then the password will never expire.

   Note: If the "Password never expires" option is active in "Security User Maintenance" dialog box for a particular user, then the "Password never expires" option will override the "Password lifetime" option for that user.

   Attempts before lockout: Defines the number of times that a user may attempt to logon correctly before they are locked out. May be set from between 0 and 127. (Default 3). See also "Lockout duration" below.

   Attempts timeout, min: Defines the length of times, in minutes, that a user can attempt to logon correctly before they are locked out. May be set from between 0 and 127. (Default 1). See also "Lockout duration" below.

   Lockout duration, min: Defines the length of times, in minutes, that a user will remain locked out of the system. May be set from between 0 and 127. (Default 5).

   Note: If “Lockout duration” is set to 0, then the user will be locked out until the system reboots (“Restart will unlock all users” option active) or until the administrator unlocks the account manually.

4. Click on the **Apply** button. Flex.View will communicate with the RealFlex server to change the security settings in the RealFlex database.

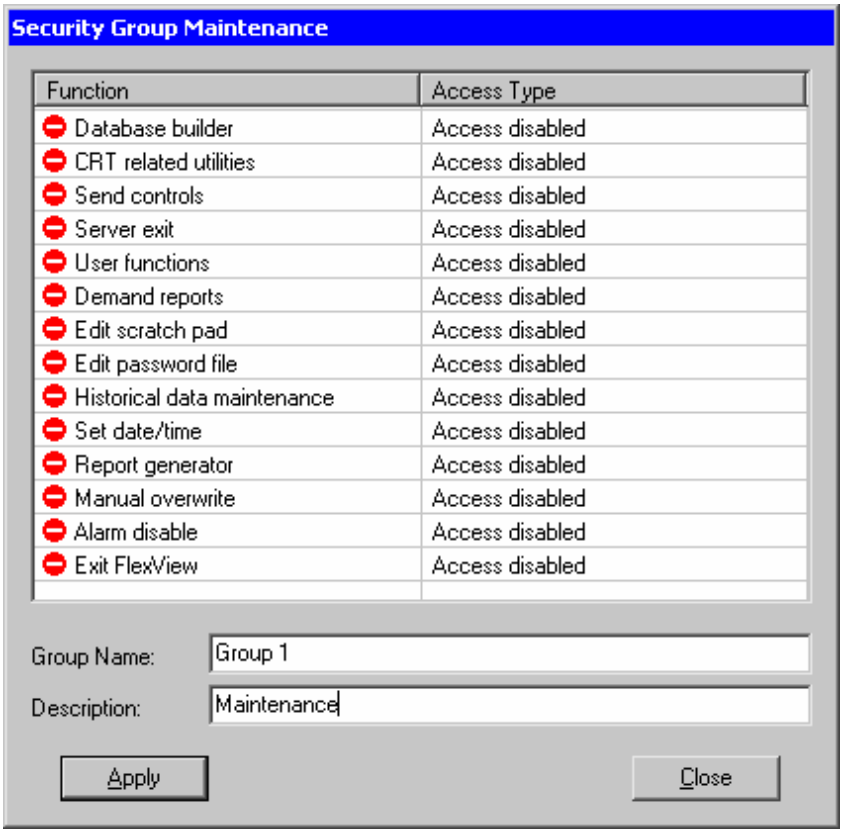
   The new security settings will now be active for all groups and their assigned users.

➔ **To add a new user group:**

By adding a user to a group, you give the user all the permissions and user rights assigned to that group.

For instance, a member of the Users group can perform most of the tasks necessary to do his or her job, such as logging on to the system and carrying out operator functions. However, only a member of the Administrators group should be assigned to add users to groups, change user passwords, or modify most system settings.

5. Click on the button. The following "Security Group Maintenance" dialog box will appear:



6. In the "Group Name:" field, enter a name for the group, maximum of thirteen (13) alphanumeric characters including spaces.

7. In the "Description:" field, enter a description for the group, maximum of thirty two (32) characters including spaces.

8. At this point, you can set the access rights to certain Flex.View functions, or you can set them at a later date. See "To set/change user access level" below for details.

9. Click on the **Apply** button. Flex.View will communicate with the RealFlex server to add the user group in the RealFlex database.

   You will be returned to the "Password Maintenance" window where the new group (Name and description) will be added to the hierarchy.

➔ **To remove a user group:**

Note: If the group has user accounts assigned to it, then you must first remove the users or assign them to another group before you can remove the group.

 Click on and highlight the group to be deleted, then click on the button.

A message, "Are you sure you want to permanently delete group (Group name and description)?" will appear. Click on the **OK** button to confirm deletion of the group or click on the **Cancel** button to abort the operation.

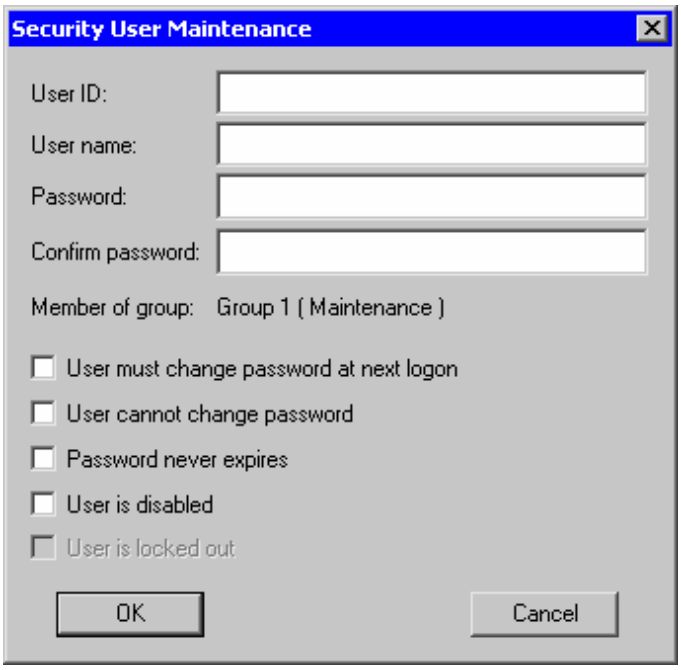
The built-in Administrator group should not be removed.

➔ **To add a new user account:**

It is advised that you should place a user in only one group. Usually you can find or add a group with the combination of permissions needed by any user.

1. Click on and highlight the Group that you want to add the user to.

2. Click on the button. The following "Security User Maintenance" dialog box will appear:



3. In the "User ID:" field, enter a User ID, maximum of twelve (12) alphanumeric characters including spaces. This will be the name that the user enters when Logging on.

4. In the "User name:" field, enter the name for the user, maximum of twenty (20) characters including spaces. This is usually the name of the employee to whom the User ID is assigned.

5. Enter a password in the "Password:" field, then re-enter the password in the "Confirm password:" field. Passwords are not echoed to the screen while being entered. See also Section 4.3.9.4 “Creating Strong Passwords”.

   Passwords can be case-sensitive, so if you vary the capitalization when you assign the password, users must type the same capitalization when they enter the password.

   Note: The complexity of the password, i.e., minimum number of characters, the use of case sensitive characters etc., is defined in the "Security Settings" dialog box.

6. In the bottom half of this dialog box, select required user security options. For details, please refer to Section 4.3.9.3.

7. Click on the **Apply** button. Flex.View will communicate with the RealFlex server to add the new user account in the RealFlex database.

   You will be returned to the "Password Maintenance" window where the new user (ID and name) will have been added to the selected group.

➔ **To remove a user account:**

- Click on and highlight the user name to be deleted, then click on the button.

  A message, "Are you sure you want to permanently delete user (User ID and name)?" will appear. Click on the **OK** button to confirm deletion of the User ID or click on the **Cancel** button to abort the operation.

  The built-in Administrator account should not be removed.

➔ **To change a user ID:**

1. Click on and highlight the user name to be changed, then click on the button.

   The following "Security User Maintenance" dialog box will be displayed:

2. In the "User ID:" field, change the User ID by typing over the existing name, maximum of twelve (12) alphanumeric characters including spaces. This will be the name that the user enters when Logging on.

3. In the "User name:" field, change the name for the user by typing over the existing name, maximum of twenty (20) characters including spaces. This is usually the name of the employee to whom the User ID is assigned.

4. In the bottom half of this dialog box, select or change required user security options. For details, please refer to Section 4.3.9.3.

5. Click on the **OK** button. Flex.View will communicate with the RealFlex server to change the User ID in the RealFlex database.

   You will be returned to the "Password Maintenance" window where the new user (ID and name) will have replaced the existing name in the list.

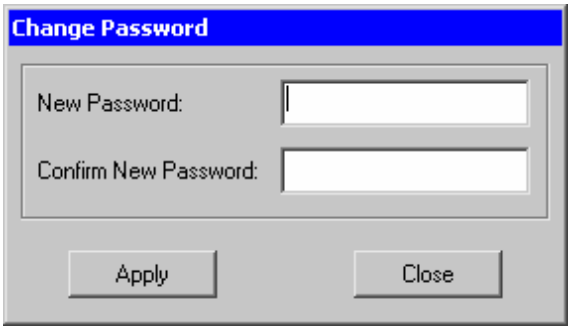
➔ **Changing the user logon passwords:**

This option allows you to change user logon passwords, or to change your own logon password.

To change a user password:

1. Click on and highlight required user name, then click on the button.

   The following "Change Password" dialog box will appear:



2. Enter a new password in the "New Password:" field, then re-enter the new password in the "Confirm New Password:" field. Passwords are not echoed to the screen while being entered. See also Section 4.3.9.4 “Creating Strong Passwords”.

   Passwords can be case-sensitive, so if you vary the capitalization when you assign the password, users must type the same capitalization when they enter the password.

   The complexity of the password, i.e., minimum number of characters, the use of case sensitive characters etc., is defined in the "Security Settings" dialog box.

3. Click on the **Apply** button. Flex.View will communicate with the RealFlex server to change the User password in the RealFlex database.

   The new password will now be active for the selected user.

To change your own user password:

1. Click on and highlight your own user name, then click on the button.

   The following "Change Password" dialog box will appear:

2. In the "Old Password:" field, enter your existing password.

3. Enter a new password in the "New Password:" field, then re-enter the new password in the "Confirm New Password:" field. Passwords are not echoed to the screen while being entered. See also Section 4.3.9.4 “Creating Strong Passwords”.

Passwords can be case-sensitive, so if you vary the capitalization when you assign the password, users must type the same capitalization when they enter the password.

The complexity of the password, i.e., minimum number of characters, the use of case sensitive characters etc., is defined in the "Security Settings" dialog box.

4. Click on the **Apply** button. Flex.View will communicate with the RealFlex server to change the User password in the RealFlex database.

   Your new password will now be active.

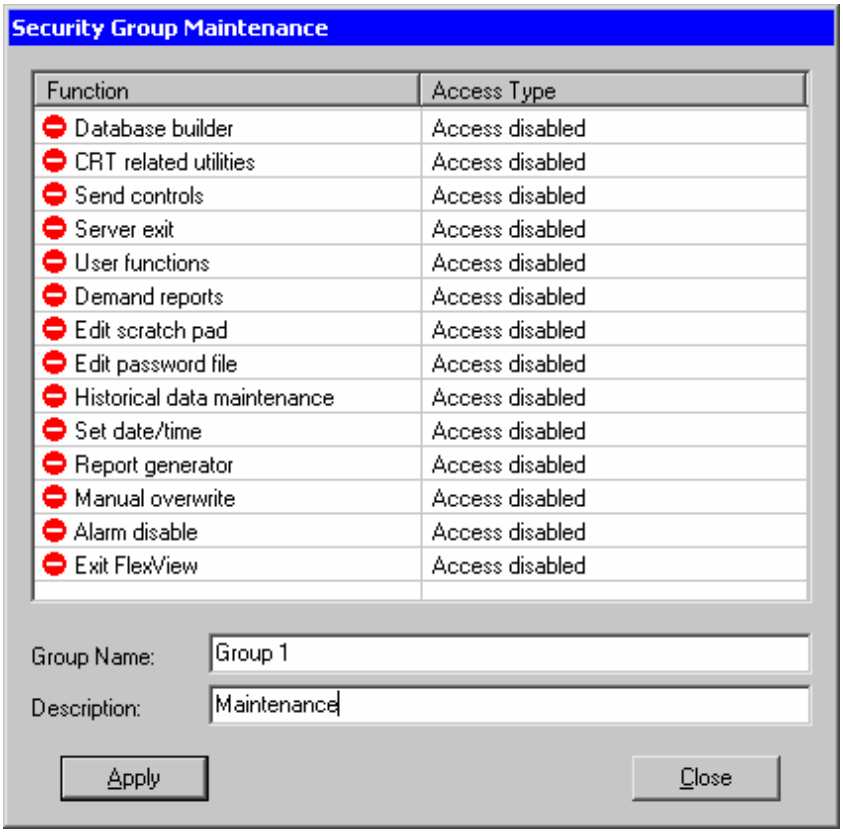
   Note: When the "User cannot change password" option is active in the "Security User Maintenance" dialog box, the user will not be able to change their own password. If the user attempts to change their password, after clicking on the **Apply** button the following message will be displayed:

➔ **To set/change user access level:**

This option allows you to set or change user access levels for a group and all its assigned users.

1. Click on and highlight required group, then click on the button.

   The "Security Group Maintenance" dialog box will appear:



This window displays a list of Flex.View functions (See table below) that can be selectively enabled, disabled or secured by a password. When a new group is added, these functions are initially set to "Access disabled".

In this list, a symbol is placed to the left of the function to signify its current access level. The significance of these symbols are:

= Access without password.

= Password required.

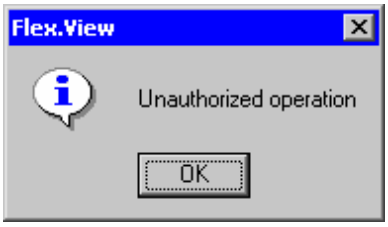
= Access disabled.

2. Click on the function for which you want to change the access rights, then click on the button which appears to the right and from the drop-down list select required option. Three choices are available:

   Access without password - Unrestricted access to the user.

   Need password - To make a function available to the user by the entry of the users password, but unavailable to others who might be present while he/she is logged on.

   Access disabled - To make a function unavailable to the user. When a menu function is disabled, the user will not be able to see this function or it may be grayed out in the Flex.View menus. When a Dynamic Display Control function is disabled, the following message will be displayed when the user tries to access the function:



   In order to maintain system security, the System Administrator will need to disable access to the "Edit password file" function for all user groups, but not for the Administrators group.

3. Repeat Step 2 above for any other Flex.View functions for which you wish to change the access rights.

4. After changing required access options, click on the **Apply** button or click on the **Close** button if you do not want to make any changes.

   Flex.View will communicate with the RealFlex server to change the access rights in the RealFlex database for the selected group.

Flex.View functions:

Functions	Controls access to:
Database builder	The "Database Editor" option from the "Configuration" menu.
CRT related utilities	The "Send Flex.Report File to the Server" option from the "Configuration" menu.
Send controls	Sending Controls to a controllable device.
Server exit	Not used in Flex.View.
User functions	The "User Functions" window from the "Configuration - Options" menu.
Demand reports	The "Demand Reports" options from the "Main" menu.
Edit scratch pad	Not used in Flex.View.
Edit password file	The "Password Maintenance" option from the "Configuration" menu.
Historical data maintenance	The "Historical Editor" option from the "Configuration" menu.
Set date/time	The "Set Server Time/Date" option from the "Utilities" menu.
Report generator	The "Report Generator" option from the "Configuration" menu.
Manual overwrite	To manually correct the value or state of the database point associated with the poke point.
Alarm disable	To disable alarming for a selected point.
Exit FlexView	The "Exit Flex.View" option from the "Main" menu.

To exit the "Password Maintenance" window, click on the button in the top right-hand corner of the window.

4.3.9.3 Security User Maintenance options

When using the "Password Maintenance" window and you choose to add or change a User account, you are presented with a "Security User Maintenance" dialog box. In the bottom half of this dialog box, there are a number of user security options that can be selected, as shown below:

➔ **To select an option:**

- Click on required check-box(es) to toggle between active and non-active. A tick will appear when active.

Choices are:

User must change password at next login: When active, the user is forced to change the password the first time they logon. When the administrator adds a new user account to a group, a temporary password is assigned for that user. When the user logs on for the first time he/she will be forced to change the password.

User cannot change password: When active, the user cannot change the assigned password. This option is usually selected only for user accounts that are used by more than one person.

Password never expires: When active, the password will never expire and overrides the "Password lifetime" setting in the "Security Settings" dialog box.

User is disabled: When active, the selected user account is disabled. The built-in Administrator account should not be disabled.

User is locked out: When active, the account is locked out, which means the user will be unable to log on. If the account is currently locked out, this check-box is selected and available. You can clear this check-box to unlock the account.

If the account is not locked out, the check-box is cleared and shaded. You cannot use this option to lock an account. The only way an account can be locked is if the user tries to log on more than the number of logon attempts specified in the "Security Settings" dialog box. If you want to prevent use of an account, disable it. A user whose account has been disabled will not be able to log on until a member of the Administrators group enables the account.

4.3.9.4 Creating Strong Passwords

Good computer security includes the use of strong passwords for your system and user logon.

For a password to be strong and hard to break, it should:

- Be at least seven characters long.
- Contain characters from each of the following three groups:

Description	Examples
Letters (uppercase and lowercase)	A, B, C,...; a, b, c,...
Numerals	0, 1, 2, 3, 4, 5, 6, 7, 8, 9
Symbols (all printable characters not defined as letters or numerals)	` ~ ! @ # % ^ & * ( ) _ + - = { } | [ ] \ : " ; ' < > ? , . /

- Have at least one symbol character in the second through sixth positions.
- Be significantly different from prior passwords.
- Not contain your name or user name.
- Not be a common word or name.

Passwords can be the weakest link in a systems security scheme. Strong passwords are important because password cracking tools continue to improve and the computers used to crack passwords are more powerful. Network passwords that once took weeks to break can now be broken in hours.

Password cracking software uses one of three approaches: intelligent guessing, dictionary attacks, and automation that tries every possible combination of characters. Given enough time, the automated method can crack any password. However, it still can take months to crack a strong password.

RealFlex passwords can be up to 10 characters long (Standard security), or 25 characters long (Enhanced security).

4.3.10 Printer Config

The "Print Config" option from the "Configuration" menu allows you to configure your printer. This command presents a Print Setup dialog box, where you may specify the destination printer, the range of pages to be printed, the number of copies, and other printer setup options.

4.3.11 Desktop Layouts

For details on Desktop Layouts, please refer to Section 1.4.

4.3.12 Options

Selecting "Options" from the "Configuration" menu will allow you to change the Flex.View Application program start-up actions and configuration options.

➔ **To access the Options menu:**

- From the **Configuration** menu, select the **Options** option. By default, the "Application" window is always displayed when first entering Options.

  An expandable/collapsible hierarchy of options is displayed down the left-hand side of this window.

  Options listed below that are marked with an asterisks (*), are only visible to Flex.View users with a Development licence and appropriate user-level access.

  Application -
  - Sounds
  - Colors
  - Miscellaneous
  - Environment
  - Product Info

  Project -
  - Alarms
  - Fonts
  - Main Menu *
  - User Functions *
  - Zone Settings *
  - Zone Editor *
  - Advanced

  User Options -
  - Main Menu *

Note: The Project options are only available after you have opened a project. The User options are only available after you have logged onto the system.

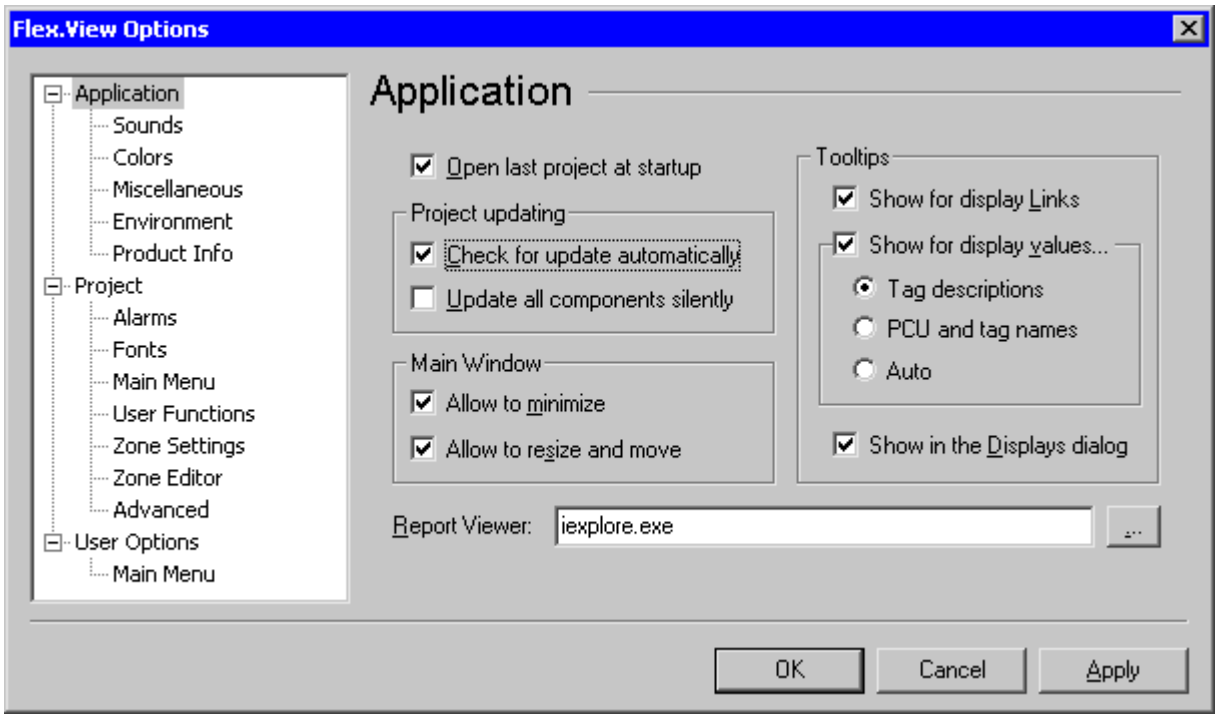
➔ **To select an option:**

- Move the pointer over the required option in the hierarchy. The pointer will change to a hand and the selected option will be underlined and change to blue, click to select. The appropriate options window will be displayed.

Note: Some options may be password protected or may not be accessible to the operator.

4.3.12.1 Application window (Configuration - Options menu)

The "Application" window, as shown below, allows you to change the Application start-up actions, whether tooltips should be displayed or not, whether to allow the operator to minimize, resize and move the main window and to select the Report Viewer.



The Application window is divided into three sections; “Project updating”, “Main Window” and “Tooltips” (a pop-up definition). There are also two other options which are discussed below.

Open last project at startup option:

To automatically open the last project used when Flex.View is started, click on the "Open last project at startup" check-box. A tick will appear when activated.

If this box is not checked, on starting Flex.View you will have to manually open a project via the “Configuration” menu, “Open Project” option.

Project updating section:

There are two choices available.

1. To automatically check for updates on the system, click on the "Check for update automatically" check-box. A tick will appear when activated.

   If this box is not checked, you will have to manually check for updates via the “Configuration menu”, “Check for Updates” option.

2. If you want to update all components silently, click on the "Update all components silently" check-box. A tick will appear when activated. When this option is selected, the user is not required to interact with the update process.

   If this option is not selected (normally used for diagnostic purposes) then the user is presented with a window containing a list of updated components. The user can then select required components for updating.

Main Window section:

There are two choices available.

1. To allow the operator to minimize the main window, click on the "Allow to minimize" check-box. A tick will appear when activated. If this box is not checked, the minimize button, or , will be disabled or removed from the Flex.View Toolbar.

2. To allow the operator to resize and move the main window, click on the "Allow to resize and move" check-box. A tick will appear when activated. To resize and move the Main Window, please refer to Section 1.7.2.

Tooltips section:

Tooltips can be displayed when the mouse pointer is moved over any dynamic object for more than 1 second.

There are three choices available.

1. If you want to show tooltips for display links (if implemented), click on the "Show for display Links" check-box. A tick will appear when activated.

2. If you want to show tooltips for values (poke points) in graphic and summary displays, click on the "Show for display values" check-box. A tick will appear when activated.

   You can further decide on what information is to be displayed in the tooltip; Tag descriptions, PCU and tag names or Auto.

   For the Auto option, Flex.View decides automatically to use descriptions or PCU and tag names on Tooltips. If there is a description with text then it uses description, if the description has no text then it uses PCU and tag name.

3. If you want to show tooltips in the "Select Display" window, click on the "Show in the Displays dialog" check-box. A tick will appear when activated.

Report Viewer option:

The "Report Viewer:" field allows you to select the application when displaying reports, (default "iexplore.exe").

➔ **To change the application:**

1. Click on the button to the right of the "Report Viewer:" field. The "Browse for Report Viewer Application" dialog box appears.

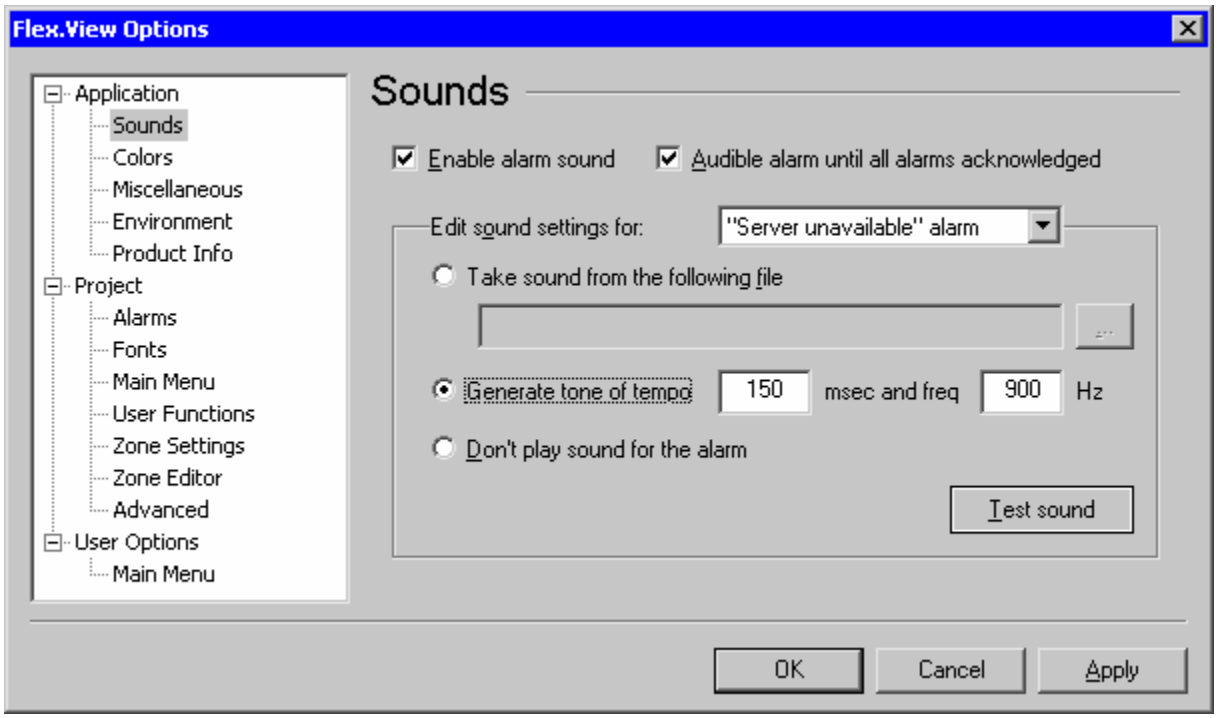
2. Click on the button to the right of the "Files of type" field and select from the pop-up list, either Execute, Command, Batch or All Files as required.

3. Look through the directories on your PC and select the required application, command, batch file etc.

After all changes have been made to the "Application" window, click on the **Apply** button followed by the **OK** button to save your changes, or click on the **Cancel** button to close window and not save changes.

4.3.12.2 Sounds window (Configuration - Options menu)

The "Sounds" window, as shown below, allows you to enable/disable audible alarms, enable/disable audible alarm until all alarms have been acknowledged and choose the sound used for the Critical, Urgent, Ordinary and RealFlex unavailable alarms.



➔ **To enable/disable audible alarms:**

- Click on the "Enable alarm sound" check-box. A tick will appear when enabled. Click again to disable (no tick).

  Note that once disabled, the audible alarm is no longer generated when a new alarm occurs. Normally the audible alarm is disabled only during testing or commissioning.

➔ **To enable/disable audible alarm until all alarms have been acknowledged:**

- Click on the "Audible alarm until all alarms acknowledged" check-box. A tick will appear when enabled. Click again to disable (no tick).

➔ **To change the sounder settings:**

The default sounds used for the audible alarms are generated sounds set as shown in the table below:

Alarm type	Tempo (ms)	Frequency (Hz)	
OK alarms	550	500	
Ordinary alarms	450	600	
Urgent alarms	350	700	
Critical alarms	250	800	
"Server unavailable" alarm	150	900	See Note below

You can change the tones used for each alarm type by editing the tempo and frequency. A "Test sound" button is provided so you can hear the newly generated tone.

1. Click on the button to the right of the "Edit sound settings for:" field and select required alarm type from the drop-down list.

2. Edit the Tempo and Frequency fields as required.

3. Click on the **Test sound** button to review the sound generated. Click on the **Stop** button to stop hearing the sound.

If required, set the sounds for other alarm types by repeating the above procedure.

As an alternative to generated sounds, you can use pre-recorded Wave sounds (files with an .wav extension).

1. Click on the button to the right of the "Edit sound settings for" field and select required alarm type from the drop-down list.

2. Click on the "Take sound from the following file" option button. The file name field and Browse button become active.

3. Click on the Browse button. The "Open" dialog box appears.

4. Look through the directories on your PC and select the required sound file.

5. Click on the **Test sound** button to review the new sound. Click on the **Stop** button to stop hearing the sound.

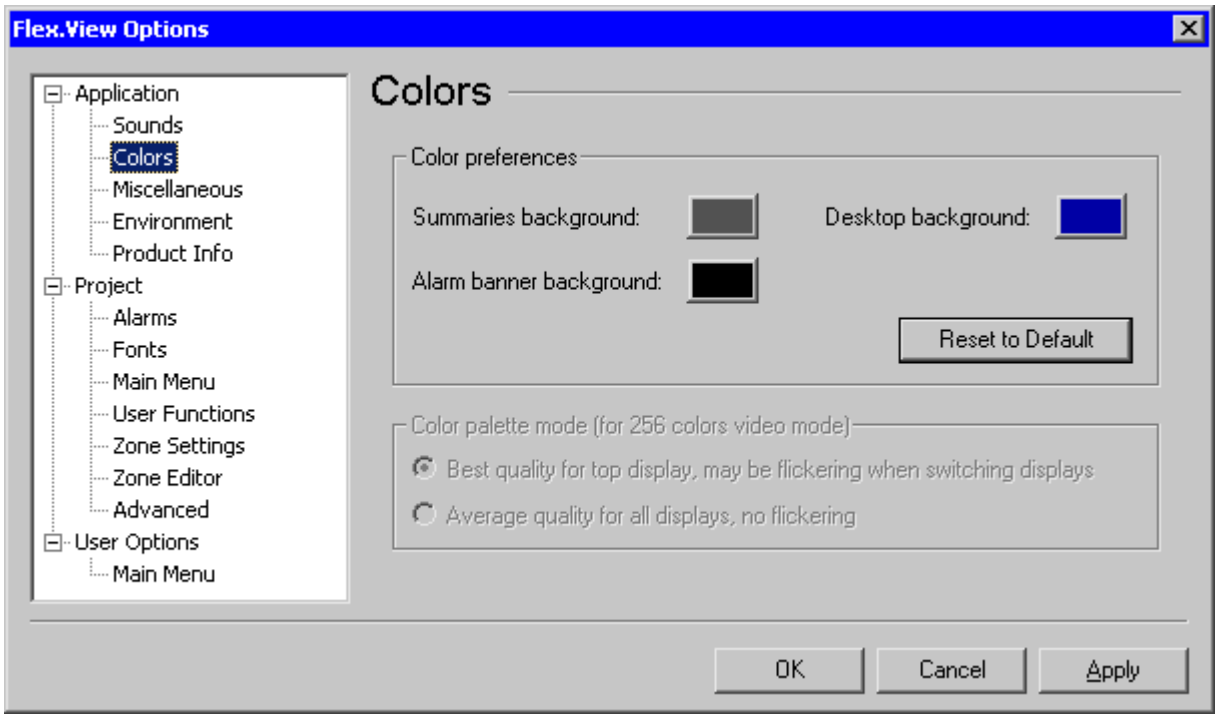
If required, set the sounds for other alarm types by repeating the above procedure.

Note: For the "Server unavailable" alarm, you can disable the audible alarm by clicking on the "Don't play sound for the alarm" option button.

After all changes have been made to the "Sounds" window, click on the **Apply** button followed by the **OK** button to save your changes, or click on the **Cancel** button to close window and not save changes.

4.3.12.3 Colors window (Configuration - Options menu)

The "Colors" window, as shown below, allows you to change the background colors for the Summary, Alarm banner and Desktop displays. Selected colors are displayed on the button tops next to the display type.



The Colors window is divided into two sections: Color preferences and Color palette mode.

Note: The "Color palette mode" section is grayed out and cannot be edited from this window.

Color preferences section:

The default colors used for display backgrounds are as shown in the table below:

Display	**Color**
Summaries	Dark Gray
Desktop	Blue
Alarm banner	Black

You can change the background color for each type of display.

➔ **To change the background color:**

1. Click on required button. A pop-up pallet of standard colors will be displayed.
2. Click on the required color. The selected color will now be displayed on the button top.

OR:

If you do not want to use any of the standard colors, you may choose a custom color.

1. Click on required button. A pop-up palette of standard colors will be displayed.

2. Click on "Other" at the bottom of the pop-up palette. The Microsoft Windows "Color" dialog box will be displayed where you can now define your custom color.

3. After you have defined the color required, click on **OK**. The selected color will now be displayed on the button top.

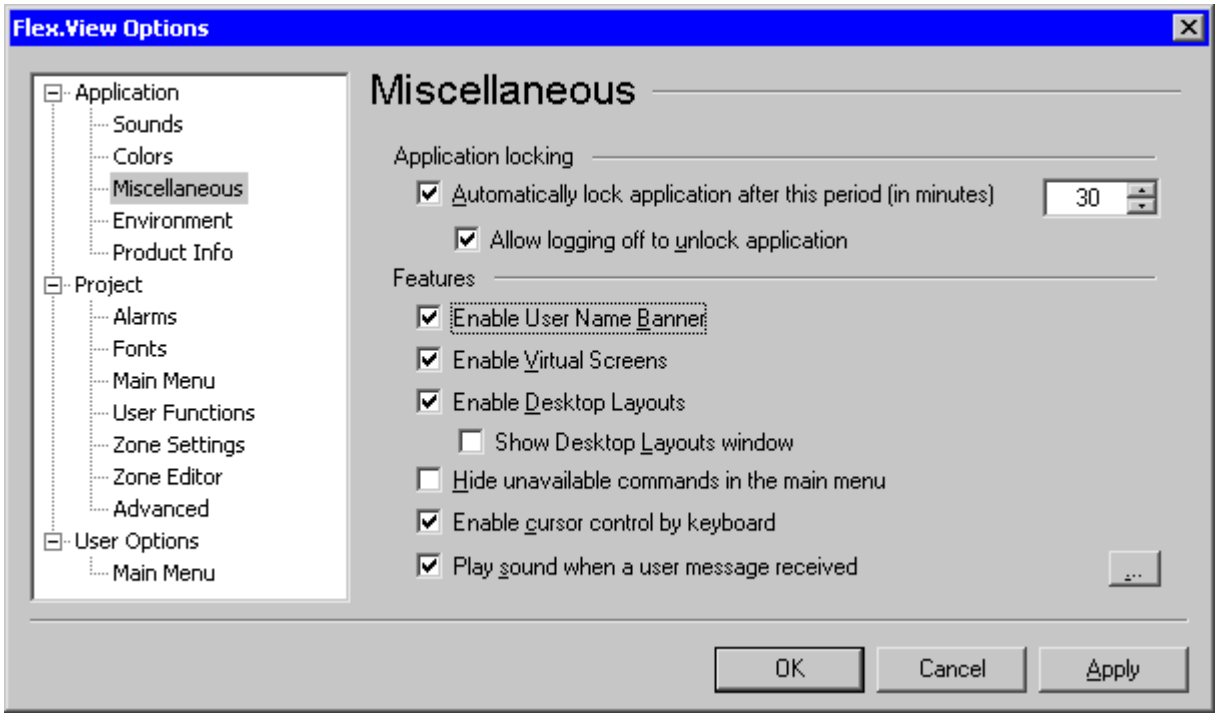
➔ **To return the colors to the default settings:**

 Click on the **Reset to Default** button.

After all changes have been made to the "Colors" window, click on the **Apply** button followed by the **OK** button to save your changes, or click on the **Cancel** button to close window and not save changes.

4.3.12.4 Miscellaneous window (Configuration-Options menu)

In the "Miscellaneous" window, as shown below, you can enable/disable; automatic locking of the application for the current user after a defined period of time; logging off to unlock a locked application; User Name Banner; Virtual screens; Desktop Layouts; the hiding of unavailable commands in menus; moving the cursor by means of the keyboard; sound to be played whenever a user message is received.



The Miscellaneous window is divided into two sections: “Application locking” and “Features”.

Application locking section:

To automatically lock the application after a predefined period of time:

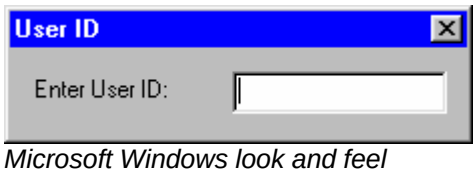
1. Click on the "Automatically lock application after this period (in minutes)" check-box. A tick will appear when enabled. Click again to disable (no tick).

2. Set the time period by clicking on the spinner buttons in the field to the right. May be set from 1 to 1,000 minutes.

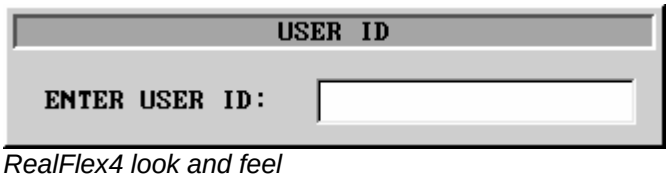
When this option is enabled, the message "Application was locked as defined time interval elapsed" will appear after the set time has elapsed.

To unlock the application, click on the **OK** button. Depending on the setting of the "Allow logging off to unlock application" option, the user will be presented with one of two dialog boxes:

With "Allow logging off to unlock application" disabled.



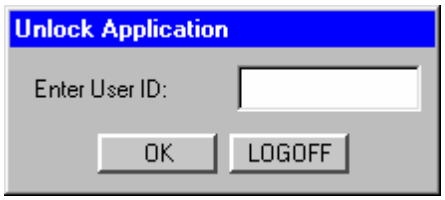
Microsoft Windows look and feel



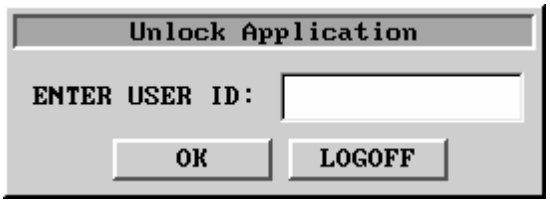
RealFlex4 look and feel

Here only the currently logged on user can unlock the application by entering their User ID.

With "Allow logging off to unlock application" enabled.



Microsoft Windows look and feel



RealFlex4 look and feel

This allows the system to be accessible to any user even if the application has been locked. A user is given two choices, they can unlock the application by entering their User ID then clicking on the **OK** button, or a different user may log off the user who locked the application by clicking on the **LOGOFF** button.

Features section:

➔ **To enable/disable the User Name Banner:**

The "User Name banner" displays the name of the currently logged on user.

- Click on the "Enable User Name Banner" check-box. A tick will appear when enabled. Click again to disable (no tick).

  When enabled, the banner is normally visible below the Date and time field of Flex.View toolbar.

  If you want to move the banner to a different location on the screen, click on the banner and hold down the left mouse button while you drag the banner to the required location, then release the mouse button.

The background color of the "User Name banner" is used to indicate the level of control you have over the active zone:

Gray - You are logged on and have full view of the system.

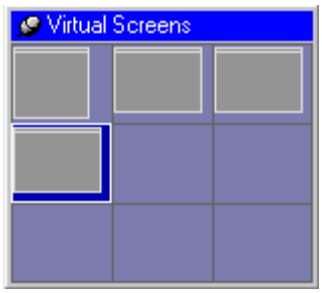
Yellow - You are logged on and have exclusive control of the active zone.

Red - You are logged on and have shared control of the active zone with someone else. See Section 1.5, "Communications status with Real.Flex server" for information of zones shared with other users.

➔ **To enable/disable Virtual screens:**

- Click on the "Enable Virtual Screens" check-box. A tick will appear when enabled. Click again to disable (no tick).

  When enabled, the "Virtual Screens" window, as shown below, will be visible in the bottom right-hand corner of the Flex.View application window.



For details on how this window is used, please refer to Section 1.3, "Virtual Screens".

➔ **To enable/disable Desktop Layouts:**

- Click on the "Enable Desktop Layouts" check-box. A tick will appear when enabled. Click again to disable (no tick).

This option allows each user to define the way their display layouts are saved and restored between sessions. See Section 4.3.12.15, "User Options" topic for details.

Enabling the "Enable Desktop Layouts" option activates the "Desktop Layouts" menu option in the "Configuration" menu.

It will also activate the "Show Desktop Layouts window" option displayed below the "Enable Desktop Layouts" option. Clicking on this check-box and then the **Apply** button will display the "Desktop Layout" window, as shown below, in the Flex.View application window.

This window allows you to store a number of different desktop layouts and recall them as and when required. For details on how this window is used, please refer to Section 1.4, "Desktop Layouts".

➔ **To hide unavailable commands in the menus:**

If a user has been denied access to a Flex.View option in the Password Maintenance window, you can choose to hide the command in the menu list.

- Click on the "Hide unavailable commands in the main menu" check-box. A tick will appear when enabled. Click again to disable (no tick). If this option is disabled any "Access disabled" option will be grayed out in the appropriate menu list.

➔ **To enable/disable cursor control by the keyboard:**

This option, when activated allows the user to move the cursor by means of the keyboard. If for some reason the mouse has become non-operational, a user may manipulate the cursor by means of the keyboard.

- Click on the "Enable cursor control by keyboard" check-box. A tick will appear when activated.

To move the cursor, press and hold-down the **Ctrl** key and press any of the arrow keys.

➔ **To play sound when a user massage is received:**

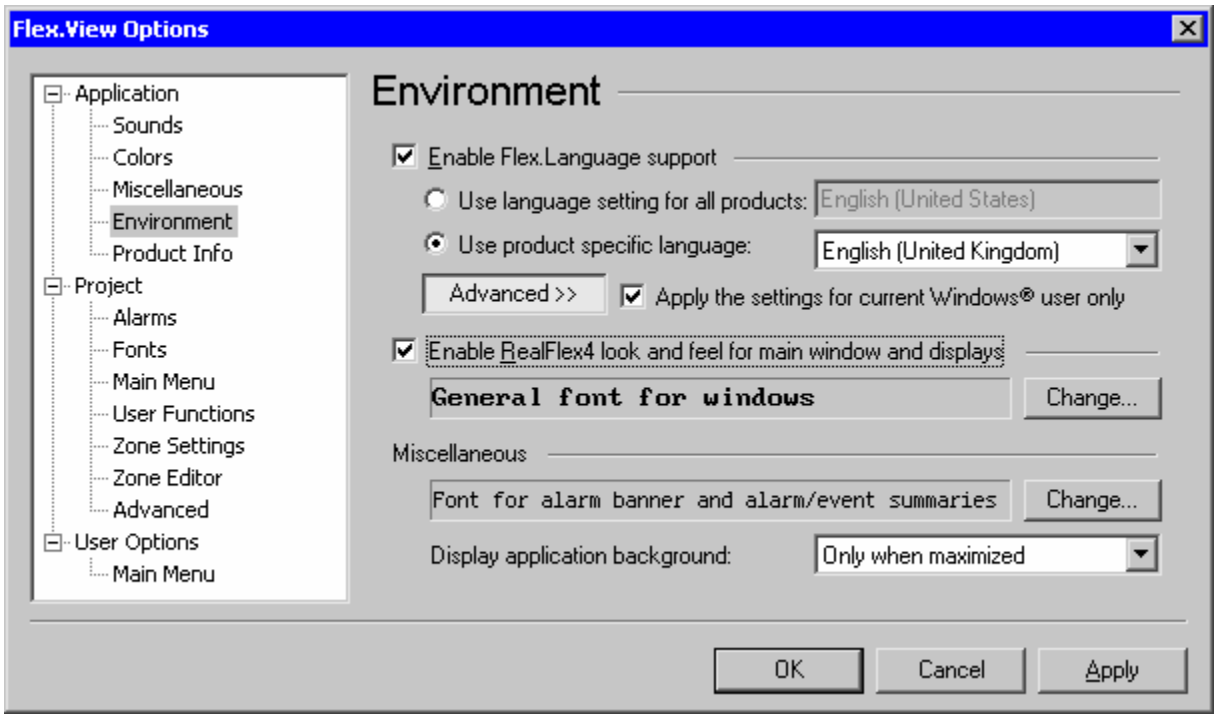
This option, when activated allows you to configure a pre-recorded "Wave" sound which will be played whenever a user message is received.

1. Click on the "Play sound when a user massage received" check-box. A tick will appear when activated and the Browse ... button to the right will become active.
2. Click on the **Browse** button. The "Open" dialog box appears.
3. Look through the directories on your PC and select the required sound file, (files with a .wav extension).

After all changes have been made to the "Miscellaneous" window, click on the **Apply** button followed by the **OK** button to save your changes, or click on the **Cancel** button to close window and not save changes.

4.3.12.5 Environment window (Configuration-Options menu)

The Environment window, as shown below, allows you to choose and specify the language settings and to set up the User Interface (look and feel) for the Flex.View Main window and its displays.



The Environment window is divided into two halves; The top half allows you to choose and specify a product specific language for use within Flex.View. The bottom half allows you to define the User Interface.

Language setting:

Product specific language translations are produced using the "Flex.Language" program and saved on your Windows PC. For details, please refer to the Flex.Language program Help documentation.

➔ **To enable a Product specific language:**

1. Click on the **Enable Flex.Language support** check-box. A tick will appear when enabled and the two options listed below will become active. Click again to disable (no tick).

2. Select required option by clicking on its option-box. Choices are:

   Use language setting for all products: - Allows you to choose the Flex.Win default language. The language shown grayed out in this field is as specified in the "Default language used for all products" field of the "Translation Language Settings" window within the Flex.Language program. If this option is not active, the default language has not been defined in the Flex.Language program.

   Use product specific language: - Allows you to select a language setting for use with Flex.View that has been produced using the Flex.Language program and saved on your Windows PC.

   To select a language, click on the button to the right of this field and choose required language from the drop-down list.

The character set on your PC will change to the selected language. For example, if you have "Spanish" and "English" character sets installed on your PC, you will be able to choose "Spanish" from the drop-down list. Now the character set used will be "Spanish". You are then able to construct a new menu or edit an existing menu in "Spanish". The same applies to all other aspects, e.g., a new text box in a display will be in the "Spanish" character set.

Note: The "Flex.Language" program can be used to remotely set or override the "Enable Flex.Language support" settings.

Advanced settings:

1. Clicking on the

button will reveal the **Apply the settings for current Windows® user only** check-box.

2. Click on this check-box to enable. A tick will appear when enabled. Click again to disable (no tick).

This option allows you to set the Flex.View character set for the user currently logged onto the Windows PC.

For example, if you were to log onto a Windows 2000 PC as "John" and opened Flex.View (logged in as "USERA") and have selected "Spanish" as the chosen language, then the character set in Flex.View will be Spanish.

If you were to log off the Windows 2000 PC and another user logged on as "David", and opens Flex.View (logged in as "USERA"), the character set will revert to the default character set of "English" and not your preferred language of "Spanish".

User Interface:

➔ **Setting the Flex.View look and feel:**

By default, the Flex.View Main window and its displays take on the appearance (look and feel) of any other Microsoft Windows program.

For users wishing to switch to the RealFlex4 (QNX) look and feel, click on the **Enable RealFlex4 look and feel for main window and displays** check-box. A tick will appear when enabled. Click again to disable (no tick).

When enabling the RealFlex4 look and feel, the field below become active allowing you to change the General font for the Flex.View windows. To change the font, click on the **Change...** button and choose required font from the "Font" dialog box.

Note: To change the fonts used in picture text objects and dynamic displays, please refer to the "Fonts" window topic.

Miscellaneous section:

This section allows you to change the font used in the Alarm Banner and Alarm/Event Summaries and to define the way the "Desktop background" as defined in the "Colors" option window will be displayed.

➔ **Font for alarm banner and alarm/event summaries:**

 Click on the **Change...** button to the right of the "Font for alarm banner and alarm/event summaries" field and choose required font from the "Font" dialog box.

➔ **Displaying application background:**

 Click on the button to the right of the "Display application background:" field and choose required option from the drop-down list. Choices are:

Never: The "Desktop background" will not be displayed.

Only when maximized: The "Desktop background" will only be displayed when the Flex.View application window is maximized.

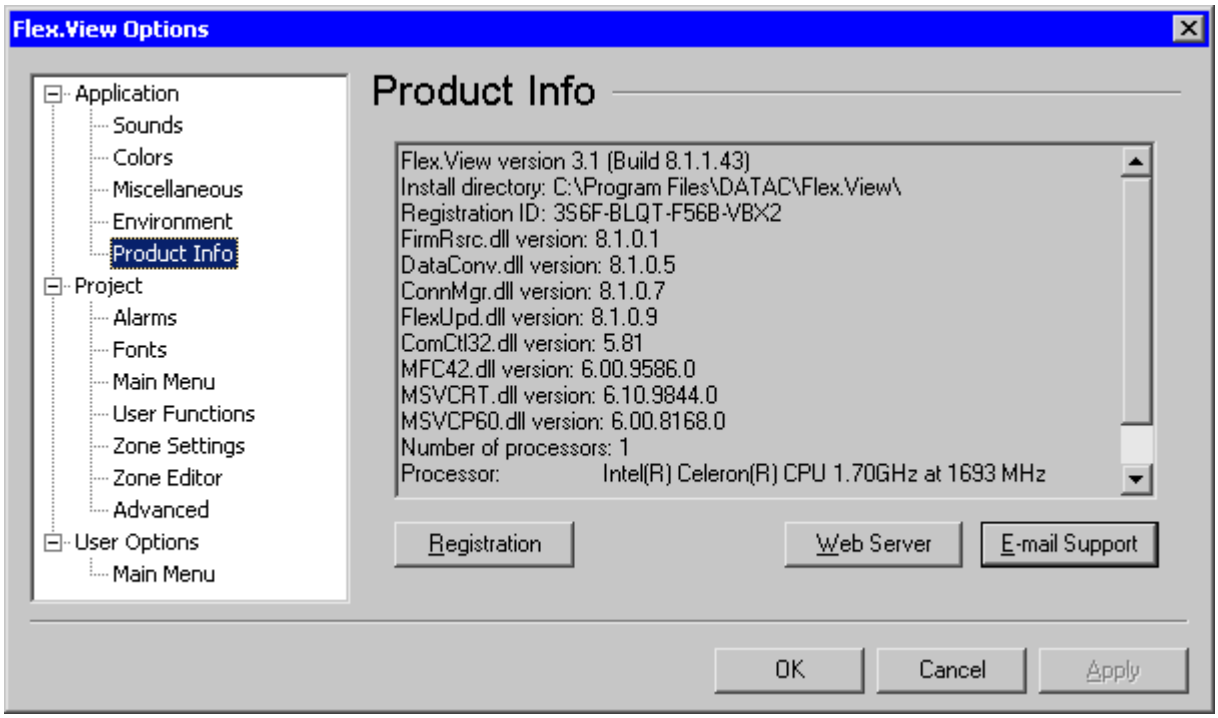
Always: The "Desktop background" will always be displayed.

After all changes have been made to the "Environment" window, click on the **Apply** button followed by the **OK** button to save your changes, or click on the **Cancel** button to close window and not save changes.

4.3.12.6 Product Info window (Configuration - Options menu)

The Product Info window, as shown below, displays the product information and all its components including information about the hardware and its operating system.

From the Product Info window you can register the Flex.View application or if you have any comments or have any problems during the system execution, you can send us an e-mail with the "Product information". This will help us to define the reason for your problems and eliminate the errors.



➔ **To Register the application:**

This option is used when a user does not have the Flex.View product enabled on the Hardware Key, i.e., they have not purchased the product.

You must e-mail Datac and provide the Registration ID Number displayed in the "Product Registration" window. Datac will then supply you with a Product ID number by e-mail.

When you receive the Product ID, use the "Product Registration" window to enter the Product ID and this will program the Hardware Key to enable the Flex.View product.

For full details on registering, see the Flex.View Getting Started Manual supplied on the CD with the Flex.View application.

➔ **To visit the Datac Technologies Limited WEB site:**

- Click on the **Web Server** button. Your WEB browser will be opened and the Datac WEB site will be dialled.

➔ **To send us an e-mail:**

1. Click on the **E-mail Support** button.

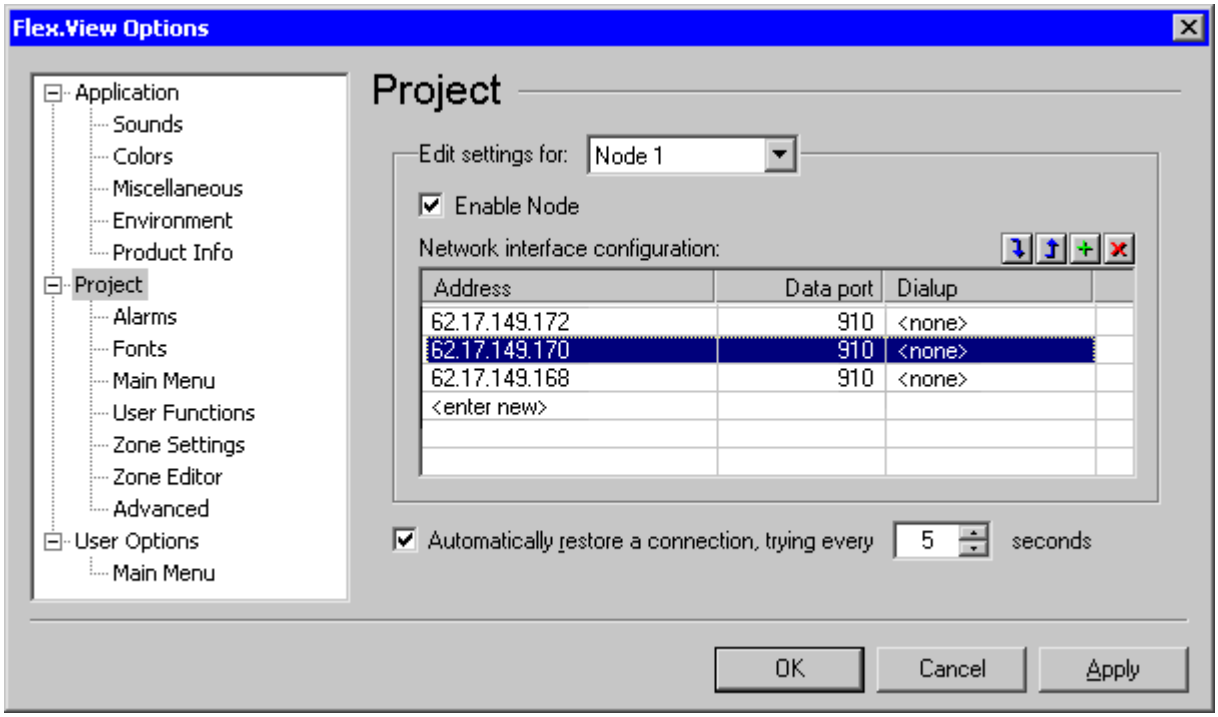
2. When prompted, say **Yes** to copying the contents of the Application summary to the clipboard. Your e-mail application will be opened where the Datac contact addresses will be entered automatically.

3. Paste the text from the clipboard to your e-mail adding information about your problems.

4. Send the e-mail to us in the normal way.

4.3.12.7 Project window (Configuration - Options menu)

The Project window, as shown below, allows you to configure the Network parameters for connecting to the RealFlex server. You can set these parameters for Node 1 (Main connection) and if required Node 2 (Standby connection). You can configure a number of Network connections, for example, if the RealFlex is a fail-over system, a second IP address (backup node) would be required.



When you initially open the "Project" window, Network parameter settings are normally displayed for Node 1 (Main). To view Node 2 (Standby) settings, click on the button of the "Edit settings for:" field and select "Node 2" from the drop-down list.

In the "Network interface configuration:" section, each line represents a separate IP connection. The number of addresses you can have depends on the number of physical network cards on your machine. Normally there is one IP address associated with each network card.

➔ **To activate a Node:**

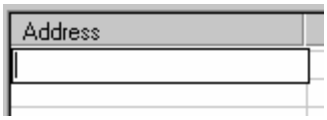
1. Click on the button of the "Edit settings for:" field and select "Node 1" or "Node 2" from the drop-down list.

2. Click on the check-box to the left of "Enable Node". A tick will appear when activated. The fields in the "Network interface configuration:" section will become active.

➔ **To add a network connection:**

1. Select "Node 1" or "Node 2" as required.

2. Double-click on **<enter new>,** or click on the button. The "Address" field will become active with a flashing cursor as shown below:



3. Type in the IP address for the RealFlex server.

4. Double-click on the "Data port" field. The field will become active with a flashing cursor. Type in the number for the data port.

5. Double-click on the "Dial-up" field, click on the button which appears to the right of this field and from the drop-down list, select a Dial-Up Networking connection to required Internet Service Provider (ISP), online service, or remote computer.

➔ **To edit an existing network connection:**

1. Select "Node 1" or "Node 2" as required.

2. To edit the IP Address, double-click on the "Address" field and type in the new address.

3. To edit the Data port, double-click on the "Data port" field and type in the new number for the data port.

4. To edit the Dial-Up connection, double-click on the "Dial-up" field, click on the button which appears to the right of this field and from the drop-down list, select a Dial-Up Networking connection to required **Internet Service Provider (ISP), online service**, or **remote computer**.

➔ **To delete a network connection:**

1. Select "Node 1" or "Node 2" as required.

2. In the "Network interface configuration:" section, click on and highlight the network connection to be deleted.

3. Click on the button. The network connection will be deleted. The **<enter new>** and any other connections which were listed below, will be moved up one position in the list.

➔ **To sort the order for network connections:**

In the "Network interface configuration:" field, you can rearrange the order of the network connections in the list.

The address position in the list represents the order in which connections will be tried. The main purpose for multiple addresses is to accommodate network redundancy, so if you cannot connect to RealFlex using the first IP address, Flex.View will try the second IP address and so on.

1. Select "Node 1" or "Node 2" as required.

2. In the "Network interface configuration:" section, click on and highlight the network connection to be rearranged.

3. Click on the buttons to move the connection up or down the list until the connection is in the required position.

4. Select other connections that require repositioning and repeat Step 3 above until they are in their required positions.

➔ **To allow automatic restoration of lost connections:**

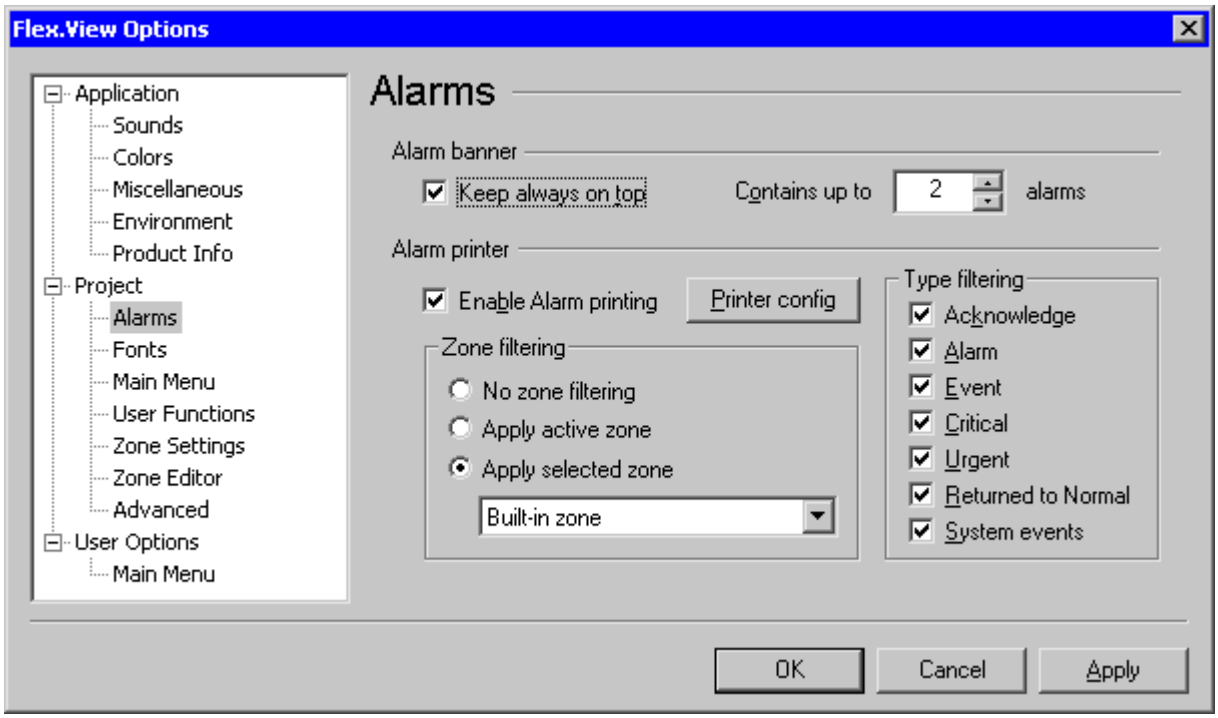
1. Click on the check-box to the left of "Automatically restore a connection". A tick will appear when activated.

2. Enter a time interval in the "trying every XX seconds" field. Either double-click on and highlight the existing time and type in the new one, or use the spinner buttons to change the time. May be set from 0 to 999 seconds, default 10 seconds.

After all entries have been made to the "Project" window, click on the **Apply** button followed by the **OK** button to save your changes, or click on the **Cancel** button to close window and not save changes.

4.3.12.8 Alarms window (Configuration - Options menu)

The Alarms window, as shown below, allows you to specify the number of lines visible in the Alarm banner and to enable and define the printing of alarm reports.



The Alarms window is divided into two sections: “Alarm banner” and “Alarm printer”.

Alarm banner section:

➔ **To keep alarm banner on top:**

1. For the Active Alarm window (banner) to always be on top regardless of how many displays are opened and closed:

2. Click on the "Keep always on top" check-box. A tick will appear when activated.

➔ **To change number of lines in the alarm banner:**

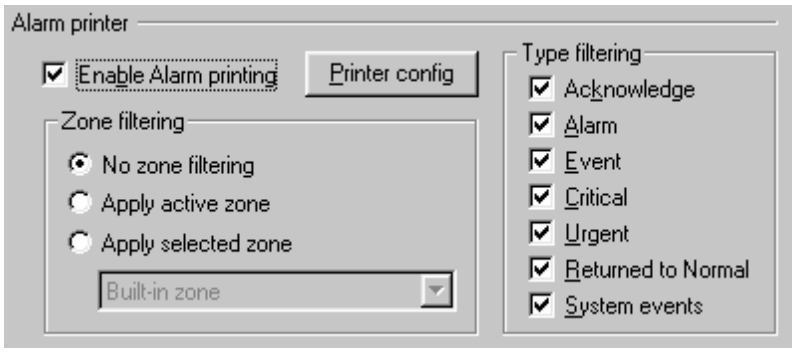
- Click on the spinner buttons in the "Contains up to XX alarms" field to select the number of lines to appear. May be set from 2 to 10 lines.

Alarm printer section:

➔ **To enable alarm printing:**

 Click on the "Enable Alarm printing" check-box. A tick will appear when activated and the "Print Alarm Page" option in the “Utilities” menu becomes active.

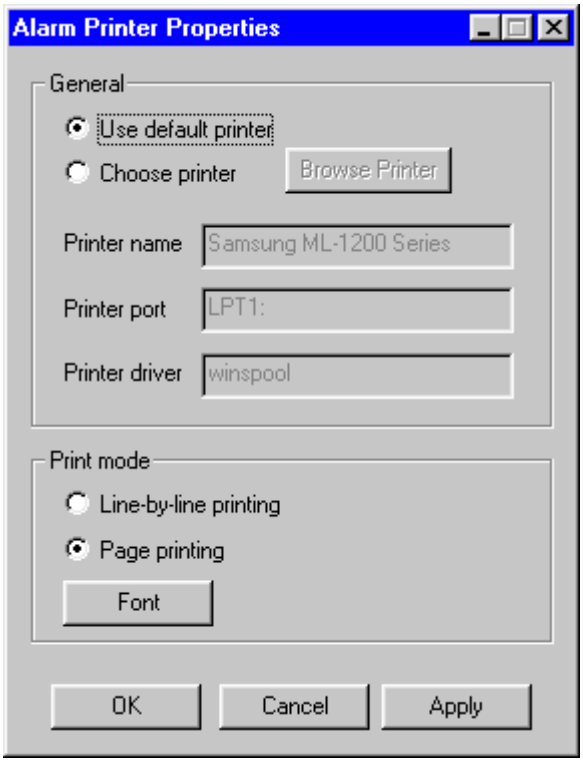
With alarm printing enabled, the Alarm printer section expands to display the following fields and buttons:



The Alarm printer section of the Alarms window is divided into two areas: “Zone filtering” and “Type filtering”.

➔ **To configure the printer:**

 Click on the **Printer config** button. The "Alarm Printer Properties" window will appear:



The "Alarm Printer Properties" window is divided into two sections: General and Print mode.

Alarm Printer Properties window - General section:

1. Select the printer where alarm reports are to be sent to by either clicking on the "Use default printer" option button, this is the printer that is normally connected to your PC.

   OR:

   Clicking on the "Choose printer" option button if you have more than one printer connected to your PC and want to change from the default printer.

2. If you selected the "Choose printer" option, the **Browse Printer** button will become active.

3. Click on the **Browse Printer** button. The "Print" dialog box will appear where you may specify the destination printer and other printer setup options.

Alarm Printer Properties window - Print mode section:

1. Select the print mode required by either clicking on the "Line-by-line printing" option button, this will print an alarm line as it appears. Most suitable for printers with continuous feed paper.

   OR:

   Clicking on the "Page printing" option button, this will only output print when it has a complete page of alarms to print. Most suitable for printers which have pages (e.g., A4 paper).

2. If you selected the “Page printing” option, the **Font** button will become active.

3. Click on the **Font** button. The "Font" dialog box will appear where you may specify the type of font and its properties.

After you have defined the alarm printer properties, click on the **Apply** button to save your changes, or **Cancel** to close window and not save changes.

➔ **To apply zone filtering:**

1. Select the type of zone filtering required.

   The choices are:

   No zone filtering - No filtering is applied, all alarms will be printed, irrespective of who is logged in and which zone is used.

   Apply active zone - Only alarms relevant to the zone of the logged on user are printed.

   Apply selected zone - Allows you to choose a pre-defined zone.

2. If you chose to apply a selected zone, the field below becomes active. Click on the button to the right of this field and from the drop-down list, select required zone.

➔ **To apply type filtering:**

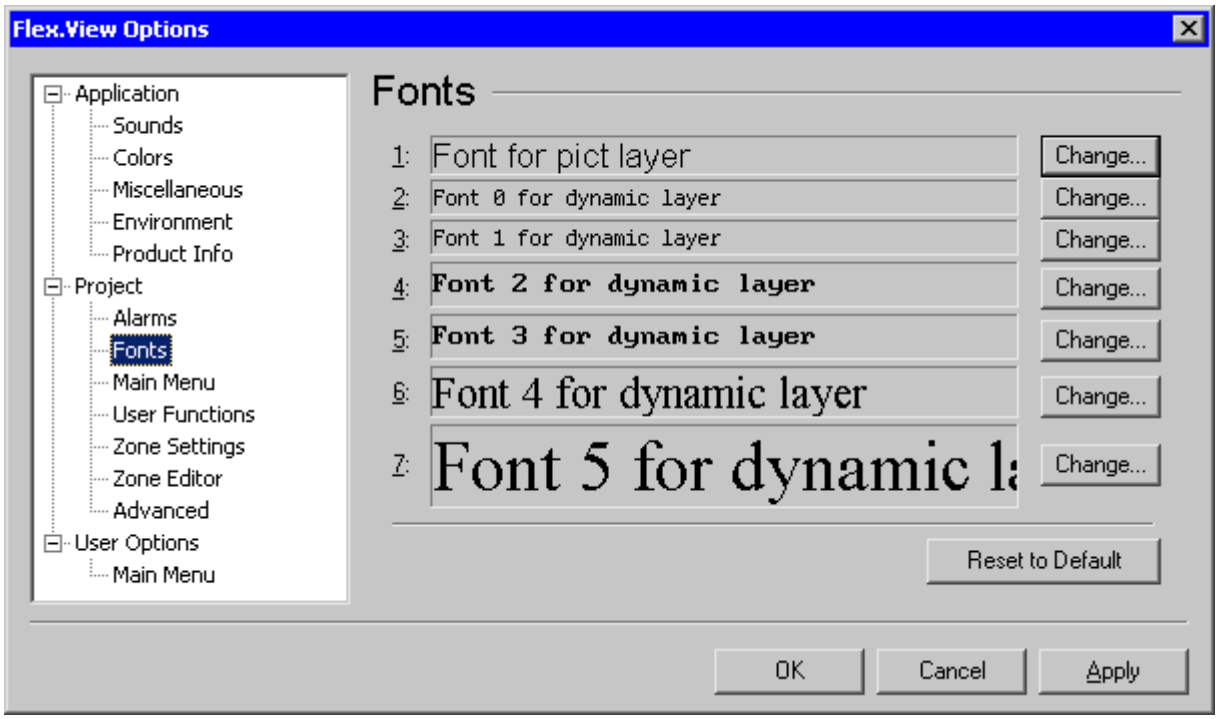
- In the "Type filtering" section, click on the check-boxes to choose which alarm types you want to appear on the report. A tick will appear when activated.

After you have made all required changes to the "Alarms" window, click on the **Apply** button followed by the **OK** button to save your changes, or click on the **Cancel** button to close window and not save changes.

4.3.12.9 Fonts window (Configuration - Options menu)

If you have setup Flex.View with the RealFlex4 look and feel "Base window" and displays, the "Fonts" window, as shown below, allow you to replace the fonts used in some of the displays for user selectable fonts.

Note: To change the fonts used for the button tops and menu's in the "Base window", alarm banner and alarm/event summaries, please refer to the "User Interface" section of the "Environment" options window, Section 4.3.12.5.



Font 1 controls the fonts used for the picture text objects.

Fonts 2 to 7 control the Font 0 - 5 levels used in all dynamic displays "Dyn layer".

➔ **To change a font:**

1. Select the font option to be changed by clicking on its **Change...** button. The "Font" dialog box will appear.

2. Choose required font and its properties then click on the **OK** button. You will be returned to the "Fonts" options window where the new font will now be displayed.

3. Repeat steps 1 and 2 above to change any other fonts.

4. Click on the **Apply** button.

➔ **To reset all fonts back to their default settings:**

1. Click on the **Reset to Default** button. The default fonts will now be displayed.

2. Click on the **Apply** button.

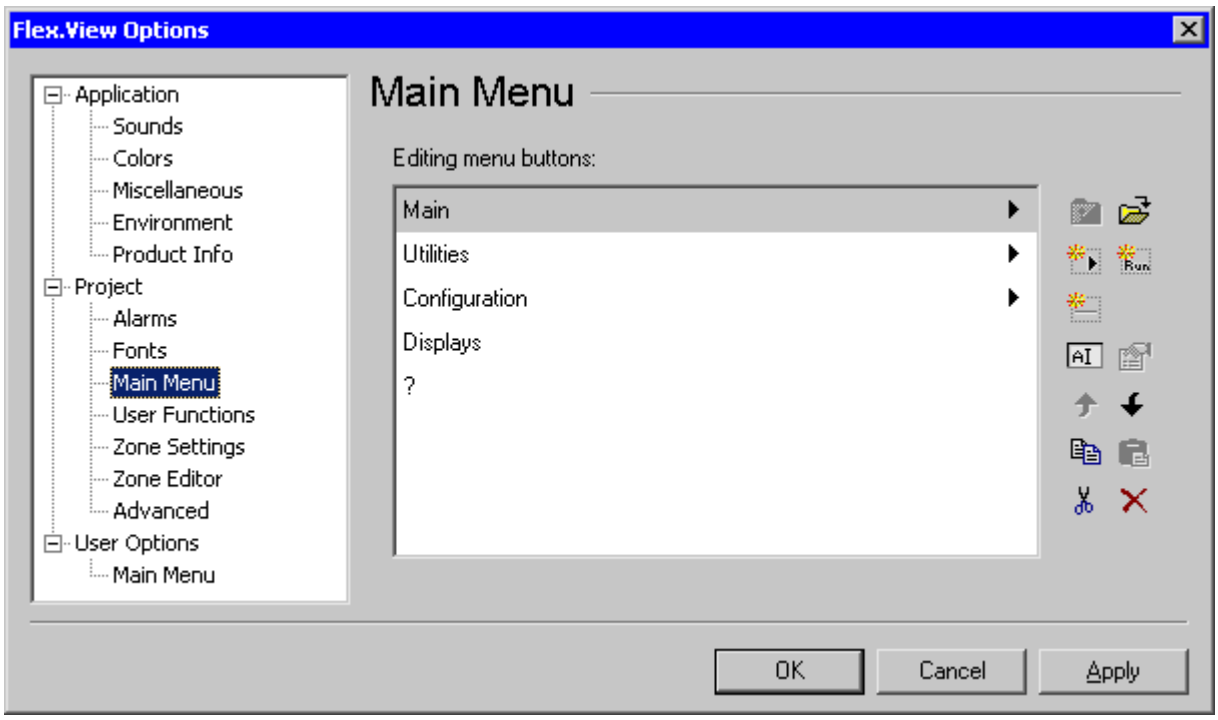
After all changes have been made to the "Fonts" window, click on the **Apply** button followed by the **OK** button to save your changes, or click on the **Cancel** button to close window and not save changes.

4.3.12.10 Main Menu window (Configuration - Options menu)

Configuration of the Main Menu window can only be carried out by Flex.View users with a Development licence and appropriate user-level access.

The Main menu window, as shown below, allows you to edit the contents of menu buttons or to add and edit project/user defined menu buttons to create personalized menu's and sub-menu's for accessing Flex.View menu options, Executive programs (.exe), Commands (.com) or Batch (.bat) files.

A unique Main Menu window is provided for each Flex.View Project and for each User ID.



Note: You must be connected to the RealFlex server before you can set this option for the Project. You must also be logged onto the RealFlex server before you can set this option for the User.

For the Project:

By default the Main Menu for the Project is configured to display the "Main", "Utilities", "Configuration", "Displays" and "?" (Help) menu buttons for the Flex.View Project. These are displayed in the top of the "Base window" and allow you to access the standard Flex.View menu options.

A user with appropriate user-level access, normally the System Administrator, can edit or re-arrange the options available via these menu buttons.

For the User:

When a user initially logs on, the Main Menu for the user is blank. Each user can define their own personalized menus and sub-menus which are automatically saved for that user ID when logging off.

Instructions below show you how to:

➔ **Create a new button:**

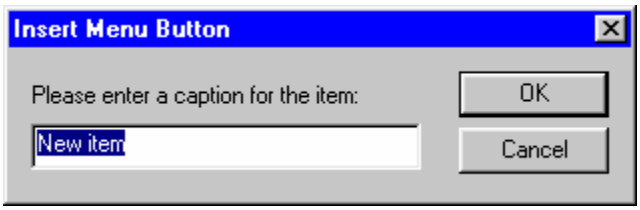
1. To create a new button for the active Flex.View project, i.e., this button will only appear for a particular project, ensure the required project is open then select the "Main Menu" option under "Project".

   OR:

   To create a new button for a user, ensure the required user is logged on then select the "Main Menu" option under "User Options".

   A "Main Menu" window similar to the one displayed above will be displayed. If user defined buttons already exist, a list of these buttons will be displayed in the "Editing menu buttons" field.

2. Click on the (Insert new button) button. The "Insert Menu Button" window will appear:



3. Type in the name for the new button. This name will appear on the button top.

4. Click on the **OK** button. You will be returned to the "Main Menu" where the name of the button will be displayed in the "Editing menu buttons" field.

➔ **Add sub-menu's to a Menu button:**

If required, you can define sub-menus for a menu button:

1. Click on and highlight the menu button and click on the (Go into Submenu) button. The "Editing menu buttons" field will be replaced by a blank "Edit menu (*button name*)" field.

2. Click on the (Insert Submenu) button. The "Insert Submenu" window will appear.

3. Type in the caption for the sub-menu item. This name will appear in the sub-menu.

4. Click on the **OK** button. You will be returned to the "Main Menu" window where the name of the sub-menu will be displayed in the "Edit menu (*button name*)" field.

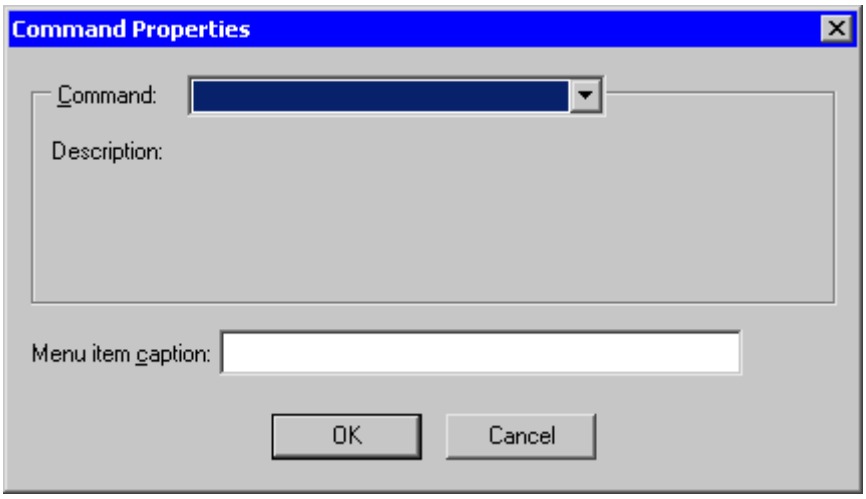
   To return to the parent menu, click on the (Return to Parent Menu) button.

   To the right of a Menu button in the parent menu, a ▶ is displayed to show that a sub-menu exists.

➔ **Add commands to a button or sub-menu:**

1. Click on the (Go into Submenu) or (Return to Parent Menu) buttons until you are at the required level in the buttons menu hierarchy.

2. Click on the (Insert Command) button. The "Command Properties" window will appear:



3. In the "Command:" field, click on the button and select required command from the drop-down list.

   For details on how to set the commands available, please refer to Section 4.3.12.16, "Command Properties window".

4. After you have selected and set up required command, click on the **OK** button.

   You will be returned to the "Main Menu" where the name of the command will be displayed in the "Edit menu (*button/sub-menu name*)" field.

5. If required, repeat steps 2 to 4 above to add additional commands to the menu list.

   You may want to separate groups of options in the menu list by inserting a line. Click on the (Insert Separator) button. In the appropriate position in the command list of the "Edit menu (*button/sub-menu name*)" field, <SEPARATOR>" will be displayed.

➔ **Edit commands for buttons or sub-menu's:**

1. Click on the (Go into Submenu) or (Return to Parent Menu) buttons until you are at the required level in the buttons menu hierarchy.

2. Click on the command to be edited, then click on the (Command Properties) button. The "Command Properties window" will be displayed where you can edit the command properties.

3. After you have edited required command, click on the **OK** button. You will be returned to the "Main Menu".

➔ **Rename a button or sub-menu name:**

1. Click on the (Go into Submenu) or (Return to Parent Menu) buttons until you are at the required level in the buttons menu hierarchy.

2. Click on and highlight the button or sub-menu to be renamed and click on the (Rename) button, or key **F2**.

3. Rename the selected button or sub-menu.

➔ **Rearrange buttons or items in a menu or sub-menu list:**

1. Click on the (Go into Submenu) or (Return to Parent Menu) buttons until you are at the required level in the buttons menu hierarchy.

2. Click on and highlight the button, command or separator to be moved in the sub-menu, then click on the (Move Item Up) or (Move Item Down) buttons until the selected button, command or separator is in the required position in the list.

➔ **Copy buttons or commands:**

If you want to copy a button or a command to a different sub-menu, but apply different arguments:

1. Click on the (Go into Submenu) or (Return to Parent Menu) buttons until you are at the required level in the buttons menu hierarchy.

2. Click on and highlight the button or command in the menu or sub-menu to be copied then click on the (Copy) button, or key **Ctrl+C**.

3. Click on the (Go into Submenu) or (Return to Parent Menu) buttons until you are at the required level in the buttons menu hierarchy where you want to paste the copied item.

4. Click on the (Paste) button, or key **Ctrl+V**. The copied item will be added to the selected menu or sub-menu. If required, set the new arguments. If copying a button, rename the button.

➔ **Delete buttons, commands or separators:**

1. Click on the (Go into Submenu) or (Return to Parent Menu) buttons until you are at the required level in the buttons menu hierarchy.

2. Click on and highlight the button, command or separator to be deleted from the menu or sub-menu, then click on the (delete) button, or key **Delete**. If you want to remove the item and copy it to the Clipboard, click on the (cut) button, or key **Ctrl+X**.

   When deleting buttons, commands or separators, a window is displayed asking you for confirmation. Click on the **Yes** button to remove the button, or command or click on the **No** button to abort the operation.

➔ **Apply User buttons:**

After all user buttons, menus and sub-menus have been defined:

1. On the "Main Menu" window, click on the **Apply** button to save your changes, or **Cancel** to close window and not save changes. The new button(s) will appear in the toolbar of the Flex.View "Base window".

2. Test your buttons and applications as required.

4.3.12.11 User Functions (Configuration-Options menu)

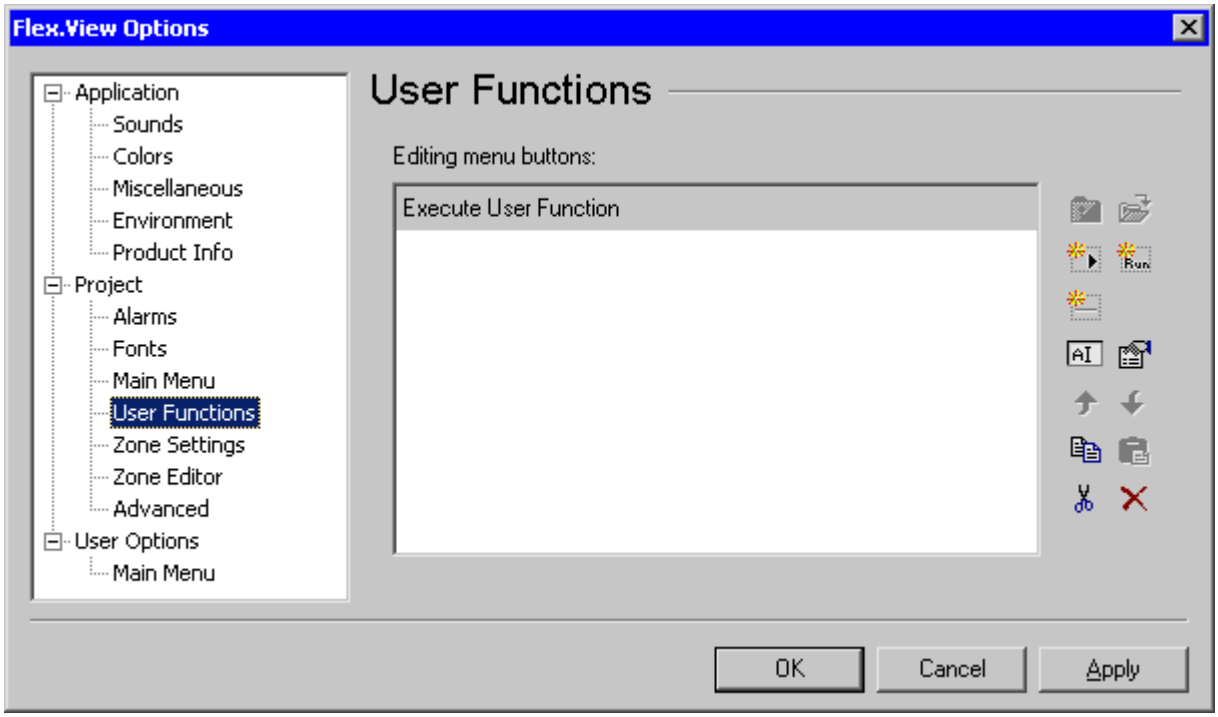
Configuration of User Functions can only be carried out by Flex.View users with a Development licence and appropriate user-level access.

The "User Functions" window, as shown below, allows a user to write QNX applications and run them from within Flex.View on a Windows PC.

For further details about creating User Functions QNX applications, please refer to additional documentation "User Functions API" supplied on the Flex.View installation CD.

Note: Access to this option may be disabled or protected by a password. For details on user level access, please refer to Section 4.3.9, “Password Maintenance“.

User Functions are executed via the "Poke Points" drop-down menu. See Section 2.3.1.



Note: You must be connected to the RealFlex server before you can set this option for the Project.

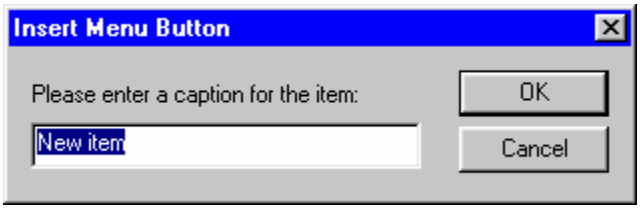
Instructions below show you how to:

➔ **Create a new button:**

1. To create a new button for the active Flex.View project, i.e., this button will only appear for a particular project, ensure the required project is open then select the "User Functions" option under "Project".

   A "User Functions" window similar to the one displayed above will be displayed. If user defined buttons already exist, a list of these buttons will be displayed in the "Editing menu buttons" field.

2. Click on the (Insert new button) button. The "Insert Menu Button" window will appear:



3. Type in the name for the new button. This name will appear on the button top.

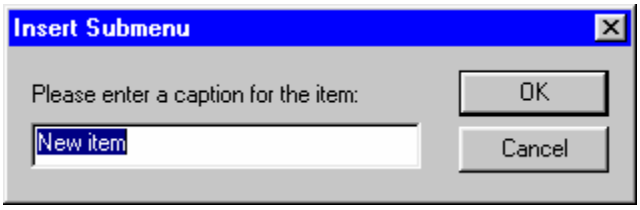
4. Click on the **OK** button. You will be returned to the "User Functions" window where the name of the button will be displayed in the "Editing menu buttons" field.

➔ **Add sub-menus to a Menu button:**

If required, you can define sub-menus for a menu button:

1. Click on and highlight the menu button and click on the (Go into Submenu) button. The "Editing menu buttons" field will be replaced by a blank "Edit menu (*button name*)" field.

2. Click on the (Insert Submenu) button. The "Insert Submenu" window will appear.



3. Type in the caption for the sub-menu item. This name will appear in the sub-menu.

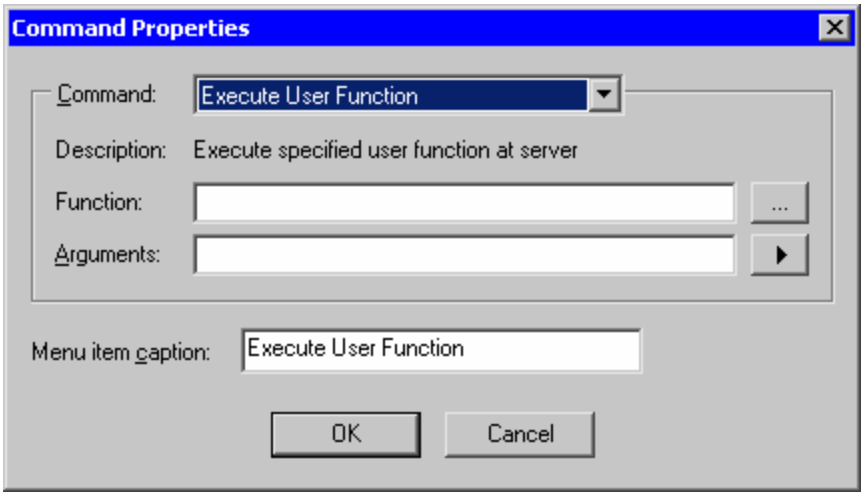
4. Click on the **OK** button. You will be returned to the "User Functions" window where the name of the sub-menu will be displayed in the "Edit menu (*button name*)" field.

   To return to the parent menu, click on the (Return to Parent Menu) button. To the right of a Menu button in the parent menu, a ▶ is displayed to show that a sub-menu exists.

➔ **Add commands to a button or sub-menu:**

1. Click on the (Go into Submenu) or (Return to Parent Menu) buttons until you are at the required level in the buttons menu hierarchy.

2. Click on the (Insert Command) button. The "Command Properties" window will appear:



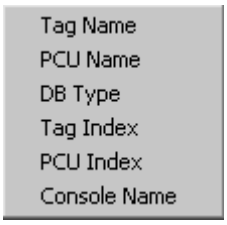
In the "Command:" field, "Execute User Function" will be displayed.

3. Click on the button to the right of the "Function" field. The "Select Remote Procedure: *" window will appear which will list by name, each User Function defined in the RealFlex system. You will note that User Function names are presented alphabetically.

   If the window is full, use the or buttons located in the upper left corner of the window to find the User Function needed.

4. Select the desired User Function from the "Select Remote Procedure: *" window.

5. Click on the button to the right of the "Arguments" field. A pop-up menu will appear:



   Arguments "Tag Name", "PCU Name", "DB Type", "Tag Index" and "PCU Index" are corresponding parameters of the tag user function being applied.

   Argument "Console Name", corresponds to the console name for the user function being applied.

6. Click on the required option. You will be returned to the "Command Properties" window where a code for the option, "$(*optionname*)" will be added to the "Arguments" field.

   These codes pass this information to the QNX application as arguments, e.g., $(TagName) will pass the name of the tag that the user has “right clicked on” and selects the User Function, for the QNX application associated with it.

7. If required, add further options (chaining) to the Argument by repeating steps 5 and 6 above. Separate each argument in the "Arguments" field with a space.

8. After you have selected and set up required command, click on the **OK** button. You will be returned to the "User Functions" window where the name of the command will be displayed in the "Edit menu (*button/sub-menu name*)" field.

9. If required, repeat steps 2 to 8 above to add additional User Functions to the menu list.

   You may want to separate groups of options in the menu list by inserting a line. Click on the (Insert Separator) button. In the appropriate position in the command list of the "Edit menu (*button/sub-menu name*)" field, <SEPARATOR>" will be displayed.

➔ **Edit commands for buttons or sub-menus:**

1. Click on the (Go into Submenu) or (Return to Parent Menu) buttons until you are at the required level in the buttons menu hierarchy.

2. Click on the command to be edited, then click on the (Command Properties) button. The "Command Properties window" will be displayed where you can edit the command properties.

3. After you have edited required command, click on the **OK** button. You will be returned to the "User Functions" window.

➔ **Rename a button or sub-menu name:**

1. Click on the (Go into Submenu) or (Return to Parent Menu) buttons until you are at the required level in the buttons menu hierarchy.

2. Click on and highlight the button or sub-menu to be renamed and click on the (Rename) button, or key **F2**.

3. Rename the selected button or sub-menu.

➔ **Rearrange buttons or items in a menu or sub-menu list:**

1. Click on the (Go into Submenu) or (Return to Parent Menu) buttons until you are at the required level in the buttons menu hierarchy.

2. Click on and highlight the button, command or separator to be moved in the sub-menu, then click on the (Move Item Up) or (Move Item Down) buttons until the selected button, command or separator is in the required position in the list.

➔ **Copy buttons or commands:**

If you want to copy a button or a command to a different sub-menu, but apply different arguments:

1. Click on the (Go into Submenu) or (Return to Parent Menu) buttons until you are at the required level in the buttons menu hierarchy.

2. Click on and highlight the button or command in the menu or sub-menu to be copied then click on the (Copy) button, or key **Ctrl+C**.

3. Click on the (Go into Submenu) or (Return to Parent Menu) buttons until you are at the required level in the buttons menu hierarchy where you want to paste the copied item.

4. Click on the (Paste) button, or key **Ctrl+V**. The copied item will be added to the selected menu or sub-menu. If required, set the new arguments. If copying a button, rename the button.

➔ **Delete buttons, commands or separators:**

1. Click on the (Go into Submenu) or (Return to Parent Menu) buttons until you are at the required level in the buttons menu hierarchy.

2. Click on and highlight the button, command or separator to be deleted from the menu or sub-menu, then click on the (delete) button, or key **Delete**. If you want to remove the item and copy it to the Clipboard, click on the (cut) button, or key **Ctrl+X**.

   When deleting buttons, commands or separators, a window is displayed asking you for confirmation. Click on the **Yes** button to remove the button, or command or click on the **No** button to abort the operation.

➔ **Apply User Functions:**

After all user menus and sub-menus have been defined:

1. On the "User Functions" window, click on the **Apply** button to save your changes, or **Cancel** to close window and not save changes.

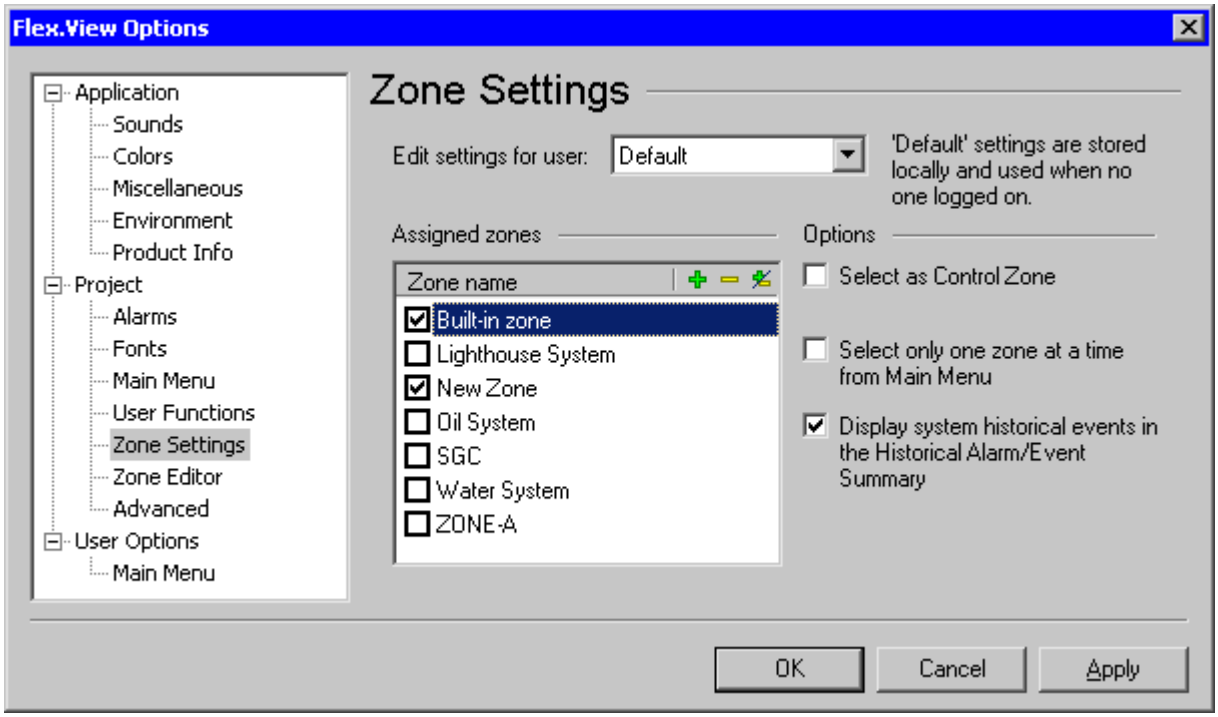
   An "Execute User Functions" option will be added to the "Poke Points" drop-down menu allowing the Flex.View user to execute configured User Functions.

2. Test your menu items and commands as required.

4.3.12.12 Zone Settings window (Configuration - Options menu)

Configuration of the Zone Settings window can only be carried out by Flex.View users with a Development licence and appropriate user-level access.

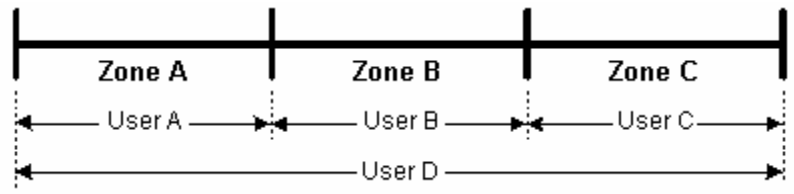
The Zone Settings window, as shown below, is used to define the zone accessing and control rights for each user. Zones are defined via the "Configuration - Options - Zone Editor" window.



Note: You must be connected to the RealFlex server before you can set the Default zone or define/change the user zone settings.

In the example shown below, we have a Railway track that has been divided into three zones, A, B and C. These zones would have been defined via the "Configuration - Options - Zone Editor" window.

For this Railway track we now want to assign "User A" as the controller of "Zone A", "User B" controller of "Zone B" and "User C" controller of "Zone C". We also want to give "User D" the supervisory control of the whole track.



Using the "Zone Settings" window, four different user zone settings will need to be defined. For Users A, B and C, you will need to assign control for their allocated zone. For User D you will need to assign control over all three zones.

➔ **To define user zone settings:**

1. Click on the button of the "Edit settings for user" field and select required user (User ID) from the drop-down list.

   Note: The "Default zone" setting is used when no one is logged onto the RealFlex server or when the PC is in local mode (i.e., when not connected to the RealFlex server).

2. The "Assigned zones" section lists all zones defined in the "Configuration - Options - Zone Editor" window. You may select all zones or a selected set of zones. A tick in the check-box to the left of the zone name indicates that it has been selected.

   To select All, click on the button. Conversely, to de-select all, click on the button.

   To choose individual zones, click on the check-box to the left of the required zone(s) to toggle between selected and unselected.

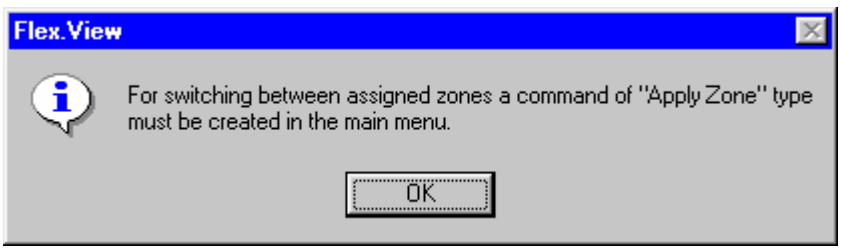
   To invert the selection, i.e., change all selected to unselected and all unselected to selected, click on the button.

3. In the "Options" section, select required option(s).

   Choices are:

   Select as Control Zone - Allows the user to execute controls within the assigned zone(s).

   Select only one zone at a time from Main Menu - Allows the user to switch between assigned zones. When selecting this option, the following message will appear:



This message reminds you that a User Menu button or a sub-menu to an existing User menu button must be created in the "Configuration - Options - User - Main Menu" window to enable the user to select the assigned zones. The Menu button or sub-menu should be configured to include "Apply Zone" commands for each of the assigned zones.

Note: If a Menu button or sub-menu has already been configured for the user and you are changing the zone accessing rights, you will need to edit the list of zones for the existing Menu button or sub-menu.

Display system historical events in the Historical Alarm/Event Summary - All historical events will be displayed in the Historical Alarm/Event Summary. A tick in the check-box to the left of the option indicates that it has been selected.

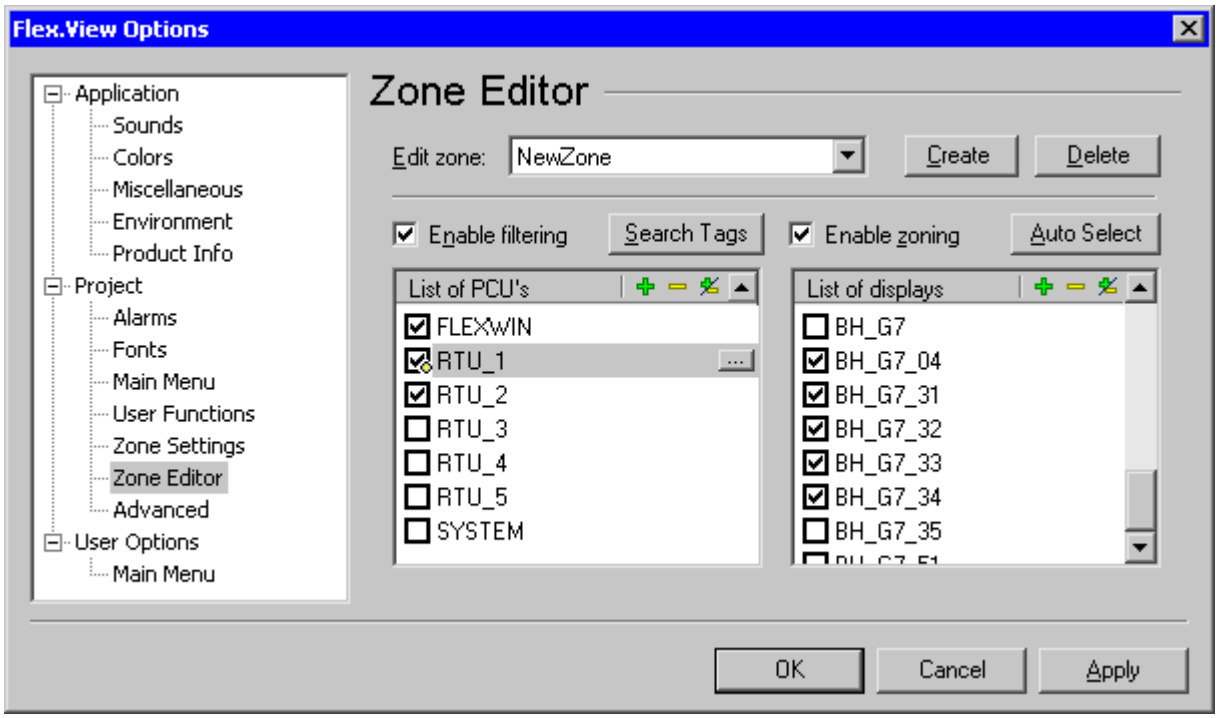
4. Click on the **Apply** button.

After the user zone has been set, whenever that user logs onto the RealFlex server again, the zone will default to the one defined.

4.3.12.13 Zone Editor window (Configuration - Options menu)

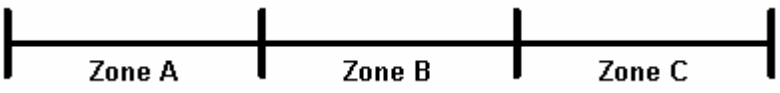
Configuration of the Zone Editor window can only be carried out by Flex.View users with a Development licence and appropriate user-level access.

The Zone Editor window, as shown below, allows you to define operational zoning to tag level with display and control options.



Note: You must be connected to the RealFlex server before you can create a new zone, or edit and delete an existing zone.

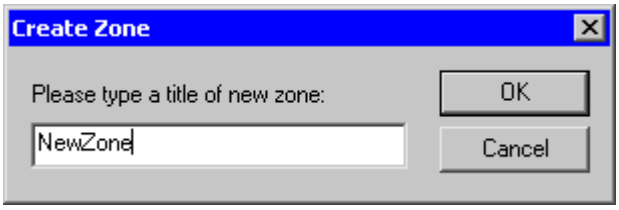
In the example shown below, we have a Railway track that needs to be divided into three zones, A, B and C.



Using the "Zone Editor" window, three different zones will need to be created and defined. For each zone you will need to select PCU's, Tags and Displays associated with that zone using the "Enable filtering" and "Enable zoning" functions.

➔ **To create a new zone:**

1. Click on the **Create** button. The "Create Zone" window will appear:



2. Type in the title for the new zone, maximum of thirty (30) alphanumeric characters including spaces, then click on the **OK** button, or exit by clicking on the **Cancel** button, or the in the upper right corner of the window.

   The "Connecting To Server" pop-up will appear for a short period while the new zone is being added to the RealFlex server.

3. Select and define the PCU's, Tags and Displays to be associated with the new zone, see "To edit an existing zone" below.

➔ **To edit an existing zone:**

- Click on the button of the "Edit zone:" field and select required zone from the drop-down list. The "Enable filtering" and "Enable zoning" fields may already be activated.

Enable Filtering:

There are two ways in which you can select PCU's and Tags, either by selecting individual PCU's and their tags or by selecting PCU's and tags by their description.

➔ **To select individual PCU's and their tags:**

1. For a new zone, click on the "Enable filtering" check-box. A tick will appear when activated and the "List of PCU's" will appear.

2. You may select to view all PCU's or a selected set of PCU's. A tick in the check-box to the left of the PCU name indicates that it has been selected.

   To select All, click on the button. Conversely, to de-select all, click on the button.

   To choose individual PCU's, click on the check-box to the left of the required PCU name to toggle between selected and unselected.

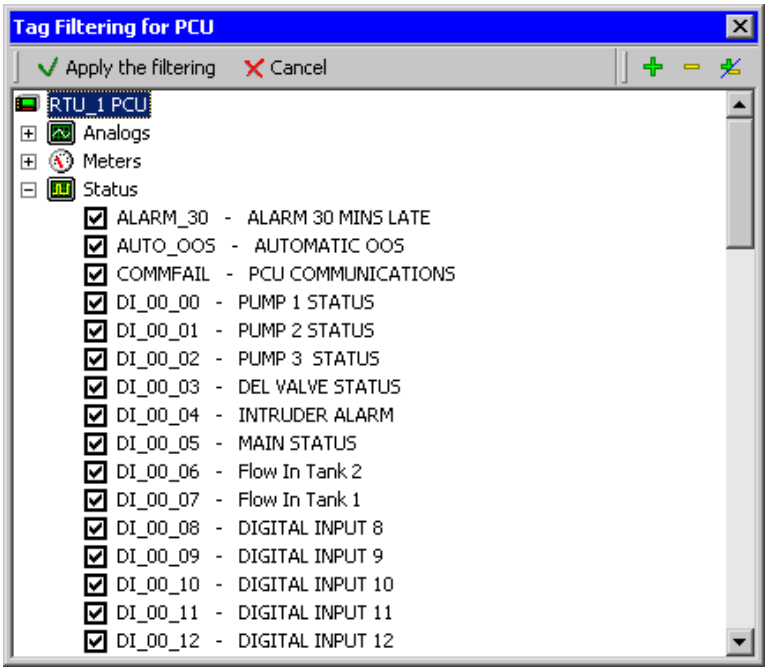
   To invert the selection, i.e., change all selected to unselected and all unselected to selected, click on the button.

Selecting Tag:

1. When you click on a selected PCU in the "List of PCU's", a … button will appear to the right of this PCU.

2. Click on the … button.

   The "Tag Filtering for PCU" window will appear:


Tag Filtering for PCU
Apply the filtering
Cancel
RTU_1 PCU
Analogs
Meters
Status
ALARM_30 - ALARM 30 MINS LATE
AUTO_OOS - AUTOMATIC OOS
COMMFAIL - PCU COMMUNICATIONS
DI_00_00 - PUMP 1 STATUS
DI_00_01 - PUMP 2 STATUS
DI_00_02 - PUMP 3 STATUS
DI_00_03 - DEL VALVE STATUS
DI_00_04 - INTRUDER ALARM
DI_00_05 - MAIN STATUS
DI_00_06 - Flow In Tank 2
DI_00_07 - Flow In Tank 1
DI_00_08 - DIGITAL INPUT 8
DI_00_09 - DIGITAL INPUT 9
DI_00_10 - DIGITAL INPUT 10
DI_00_11 - DIGITAL INPUT 11
DI_00_12 - DIGITAL INPUT 12

   An expandable/collapsible hierarchy of Tag types (Analog, Meters, Status and Tanks) and all associated tags for the selected PCU is displayed in this window.

   Tag types with a (+) symbol to the left of them can be expanded to show all tags for that type. Clicking the (-) symbol next to a Tag type will collapse the item and hide the detail.

   Note: Tag types must be expanded when making selections.

3. You may select all Tags or a selected set of Tags. A tick in the check-box to the left of the Tag name indicates that it has been selected.

   To select All, click on the button. Conversely, to de-select all, click on the button.

   To choose individual Tags, click on the check-box to the left of the required Tag name to toggle between selected and unselected.

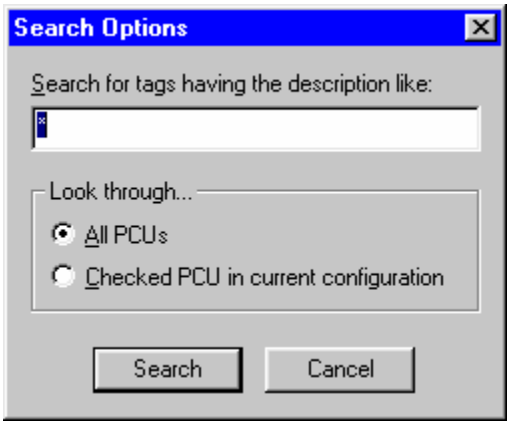
   To invert the selection, i.e., change all selected to unselected and all unselected to selected, click on the button.

4. After making your selections, click on the **Apply the filtering** button. You will be returned to the "Zone Editor" window where a yellow diamond shaped symbol is placed in the bottom right-hand corner of the PCU check-box as shown below.

➔ **To select PCU's and tags by their description:**

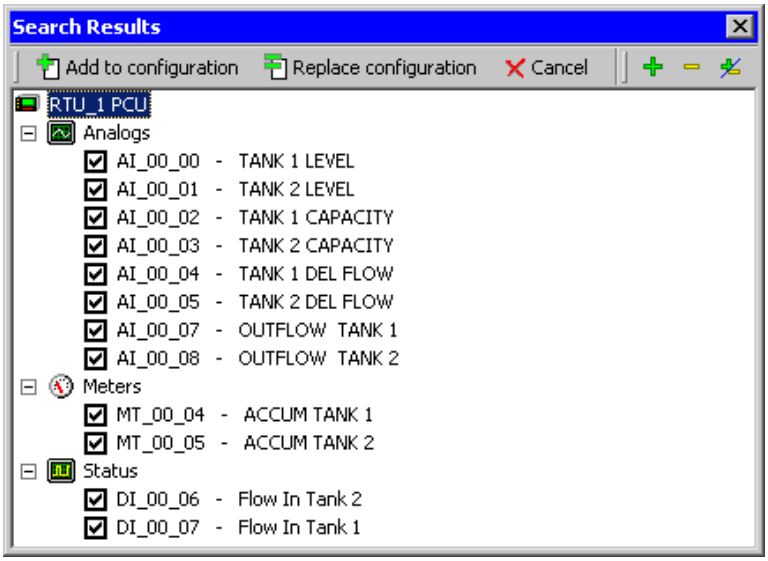
1. For a new zone, click on the "Enable filtering" check-box. A tick will appear when activated and the "List of PCU's" will appear.

2. Click on the **Search Tags** button, The "Search Options" window will appear:



3. In the "Search for tags having the description like:" field, the asterisk "*" indicates "search all tags". If you want to search for tags related to "TANK 1" for example, type ***TANK 1*.** The asterisk before and after TANK 1 is used as a wild card to request all point descriptions containing "TANK 1", i.e., TANK 1 LEVEL, OUTFLOW TANK 1 etc.

4. In the "Look through..." section, select required option, then click on the **Search** button. Flex.View will proceed to search for the defined tags. The result of the search will appear in the "Search Results" dialog box:



An expandable/collapsible hierarchy listing all PCU's on the system, their Tag types (Analog, Meters, Status and Tanks) and all associated tags are displayed in this window.

Tag types with a (+) symbol to the left of them can be expanded to show all tags for that type. Clicking the (-) symbol next to a Tag type will collapse the item and hide the detail.

To expand/collapse the detail for a PCU, double-click on the symbol next to the name of the PCU.

Note: Tag types must be expanded when making selections.

5. You may select all Tags or a selected set of Tags. A tick in the check-box to the left of the Tag name indicates that it has been selected.

   To select All, click on the button. Conversely, to de-select all, click on the button.

   To choose individual Tags, click on the check-box to the left of the required Tag name to toggle between selected and unselected.

   To invert the selection, i.e., change all selected to unselected and all unselected to selected, click on the button.

6. After making your selections, click on the **Add to configuration** button or if you want to replace an existing selection, click on the **Replace configuration** button.

   You will be returned to the "Zone Editor" window where a yellow diamond shaped symbol is placed in the bottom right-hand corner of the selected PCU check-boxes as shown below.

Enable Zoning:

1. For a new zone, click on the "Enable zoning" check-box. A tick will appear when activated and the "List of displays" will appear.

2. You may select to view all displays or a selected set of displays. A tick in the check-box to the left of the display name indicates that it has been selected.

   To select All, click on the button. Conversely, to de-select all, click on the button.

   To choose individual displays, click on the check-box to the left of the required display to toggle between selected and unselected.

   To invert the selection, i.e., change all selected to unselected and all unselected to selected, click on the button.

   Clicking on the **Auto Select** button will only select Dynamic displays.

3. After you have edited the PCU filtering and zoning fields, click on the **Apply** button.

   The "Connecting To RealFlex Server" pop-up will appear for a short period while the zone is being edited on the RealFlex server.

➔ **To delete an existing zone:**

1. Click on the button of the "Edit zone" field and select required zone from the drop-down list.

2. Click on the **Delete** button. A window is displayed asking you for confirmation. Click on the **Yes** button to delete the zone or click on the **No** button to abort the operation.

   The "Connecting To Server" pop-up will appear for a short period while the existing zone is being deleted from the RealFlex server.

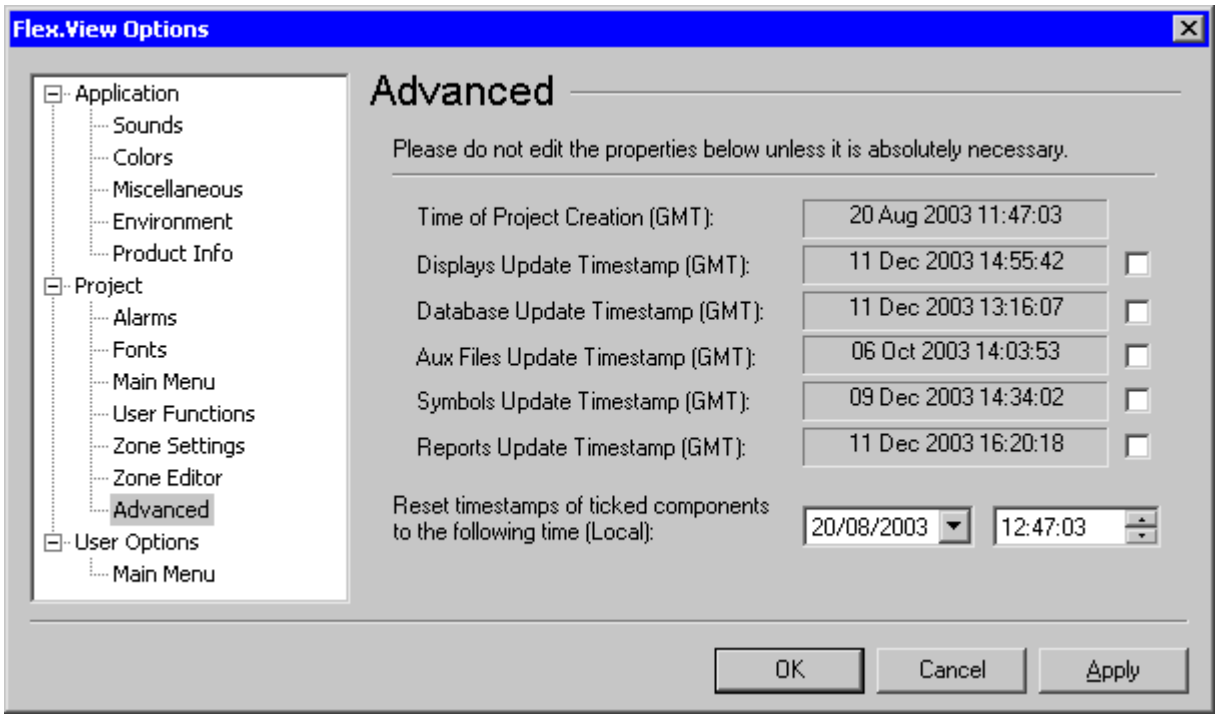
After all changes have been made to the "Zone Editor" window, click on the **Apply** button followed by the **OK** button to save your changes, or click on the **Cancel** button to close window and not save changes.

4.3.12.14 Advanced window (Configuration-Options menu)

The Advanced window, as shown below, allows you to reset the timestamp timings.

For some unexplained reason, Flex.View may not bring in all the changes for a project. You can change the date and time in this window so that all changes since the selected date will be imported to Flex.View. For example, if you change the date to 20 June 2001, all the changes since that date will be imported (brought across).

Note: You cannot set a date greater than the current date.



➔ **To reset the timestamps:**

1. Click on the check-box for the component(s) you want to reset to the same date and time. A tick will appear when selected.

2. Set the Date and Time. For details, please refer to Section 1.7.13.

3. Click on the **Apply** button. The time set for the selected component(s) will be displayed in the appropriate field to the right of the component.

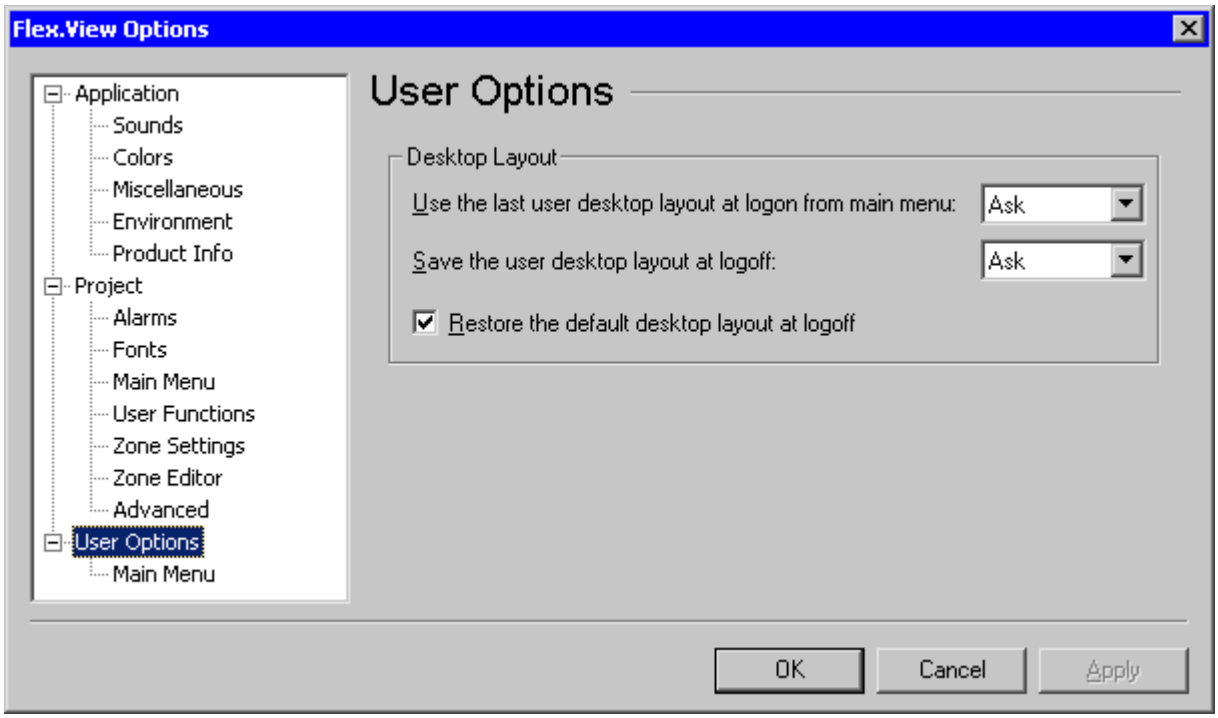
4. If you want to change other component timestamps to a different time setting, de-select any selected components and repeat steps 1 to 3 above.

After all entries have been made to the "Advanced" window, click on the **Apply** button followed by the **OK** button to save your changes, or click on the **Cancel** button to close window and not save changes.

4.3.12.15 User Options (Configuration-Options menu)

The User Options window, as shown below, allows each user to define the way their desktop layouts are saved and restored between sessions.

Note: The "Enable Desktop Layouts" option in the "Features" section of the "Miscellaneous" window must be active, tick in check-box, before the options in this window will become active and take effect.



Note: You must be connected and logged onto the RealFlex server before you can set these options.

➔ **Restoring the last user Desktop Layout at logon:**

- For the "Use the last user desktop layout at logon" option, click on the button and select required option from the drop-down list. Options are:

  Disable - When logging on, you will need to open displays or Desktop Layout as required.

  Enable - When logging on, and providing you saved your user profile when you last logged off, your layout at the time of logging off will be recovered automatically.

  Ask - When logging on, Flex.View will ask you if you want to restore the Desktop layouts from your previous session. Click on the **Yes** button to recover the layouts. If you do not want to recover the saved layouts, click on the **No** button.

➔ **Saving the user profile at logoff:**

- For the "Save the user profile at logoff:" option, click on the button and select required option from the drop-down list. Options are:

  Disable - When logging off, your user profile will not be saved.

  Enable - When logging off, Flex.View will save your user profile.

Ask - When logging off, Flex.View will ask you if you want to save your user profile for the next session. Click on the **Yes** button to save your user profile. If you do not want to save your user profile, click on the **No** button.

Note: Your user profile includes the current display layout and any Desktop layouts saved via the "Desktop Layout" window.

➔ **To restore the default desktop layout at logoff:**

 Click on the "Restore the default desktop layout at logoff" check-box to toggle between active and non-active. A tick will appear when active.

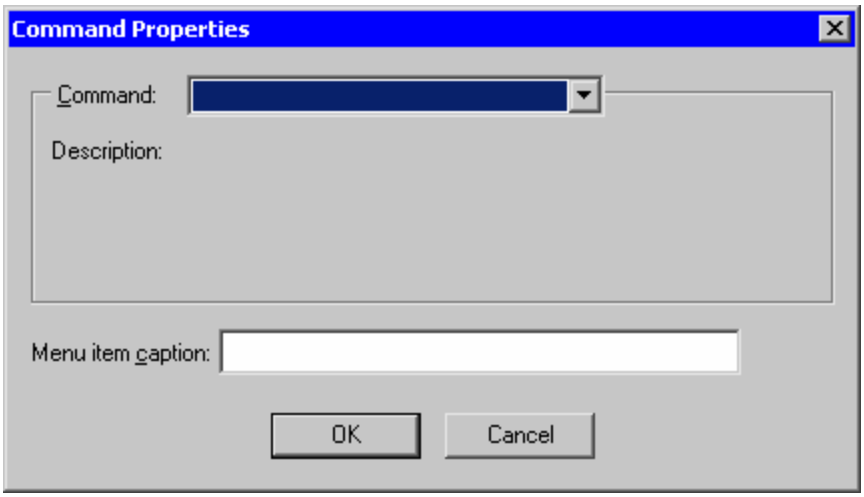
When active, your current desktop layout will be replaced by the "default" desktop layout after you have logged off.

The "Default" desktop layout is accessible to all users and is defined using the "Desktop Layout" window.

After you have made your selection, click on the **Apply** button followed by the **OK** button to save your changes, or click on the **Cancel** button to close window and not save changes.

4.3.12.16 Command Properties window

The Command Properties window, as shown below, is used to insert or edit a command for a menu button or sub-menu in the "Main Menu" windows via the "Configuration - Options" menu.



➔ **Adding commands:**

1. Click on the button of the "Command" field, the following drop-down list of commands will appear:

Option	Description
About Flex.View	Display program information, version number and copyright.
Active Alarms	Open active alarm summary. (See "PCU field" below)
Alarm Disabled Summary	Open alarm disabled summary.
Analog Summary	Open analog summary.

Continued on next page.

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Option	**Description**
Apply Zone	Apply specified zone. (See "Zone field" below)
Check for Updates	Manually check server for project updates.
Communications summary	Open communications summary.
Configuration File Editor	Edit RealFlex configuration files.
Connect	Connect project to the server.
Control Tagged Summary	Open control tagged summary.
Database Editor	View and edit tag database.
Demand Reports	Execute demand reports.
Desktop Layouts	Show "Desktop Layouts" window.
Disconnect	Disconnect connected project.
Exit Flex.View	Quit the application.
Hist. Alarm/Event	Open historical alarm/event summary. (See "PCU field" below)
Historical Editor	Open historical editor.
Import Project	Import Project
Information Tagged Summary	Open information tagged summary.
Manual Overwrite Summary	Open manual overwrite summary.
Meter Summary	Open meter summary.
On-line help	Open electronic user manual.
Open Display	Open specified display. (See "Display field" below)
Open Flex.Report File	Open specified Flex.Report file. (See "Report file field" below)
Open Project	Open specified project. (See "Project field" below)
Options	Edit application, project and logged users options.
Password Maintenance	Edit user rights and passwords.
PCU summary	Open PCU summary. (See "PCU field" below)
Print Alarm Page	Print alarm/events from buffer of alarm printer.
Print Preview	Open print preview for current window.
Print Window	Print current window using default printer.
Printer Config	Select and configure default printer.
Project Journal	Project Journal (See "Journal field" below)
Remote Modules Help	Open remote modules help. (See "Help file field" below)
Report Scheduler	Open Report Scheduler.
Run Local Program	Run application on this computer. (See "Program and Arguments fields" below)
Run Remote Procedure	Run procedure on QNX server. (See "Procedure and Arguments fields" below)
Selective Alarm Print	Print selective alarms/events.

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Option	Description
Send Flex.Report File to the server	Send specified Flex.Report file to the server.
Set Server Time/Date	Set Server Time/Date. Allows a Flex.View user to set the Date and Time on the RealFlex Server. (See "Clock mode field" below)
Status Summary	Open status summary.
Tank Summary	Open tank summary.
User Logon/Logoff	Perform user logon or logoff.

2. From the list, click on the command required.

   The name of the selected command will appear in the "Command:" field and a description of the command will be added alongside "Description:".

   Depending on the command selected, additional fields may also become active. Information on how to set these fields are described below.

   After all the fields have been completed, a default caption title will be entered in the "Menu item caption:" field.

3. If required, edit the caption in the "Menu item caption:" field by overwriting the default caption.

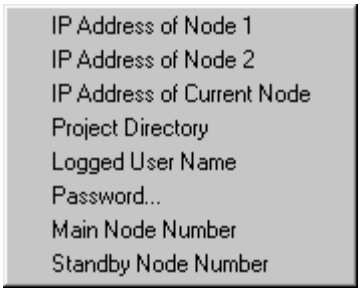
4. After completing all fields, click on the **OK** button. You will be returned to the "Main Menu" or "User Functions" window where the name of the selected application, command, batch file etc., will be added to the button or sub-menu.

Arguments field:

The "Arguments" field becomes active when selecting the "Run Local Program" and "Run Remote Procedure" commands.

You can restrict access to the command by applying arguments.

1. Click on the button to the right of the "Arguments" field. A pop-up menu will appear:



2. Click on the required option. You will be returned to the "Command Properties" window where the name of the option, in the form "$(*optionname*)" will be added to the "Arguments" field.

3. If required, add further options (chaining) to the Argument by repeating steps 1 and 2 above. Separate each argument in the "Arguments" field with a space.

The meaning of the Argument options is as follows:

IP Address Node 1 - Restrict access to the Node 1 IP Address defined in the "Configuration - Options - Project" window.

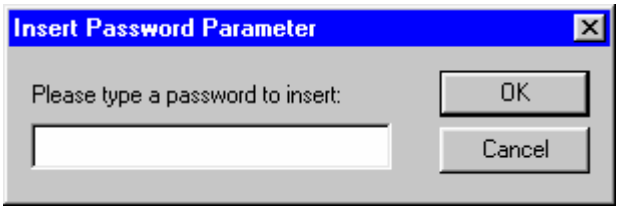
IP Address Node 2 - Restrict access to the Node 2 IP Address defined in the "Configuration - Options - Project" window.

IP Address of Current Node - Restrict access to the current IP Address.

Project Directory - This is the directory of the currently selected project. It allows you to have a directory which is related to the project you are currently using.

Logged User Name - Restrict access to the currently logged user.

Password... - Allows you to define a password. Clicking on this option will display the "Insert Password Parameter" dialog box:



Enter a password then click on the **OK** button. The password will not be echoed to the screen while being entered.

When you enter or change a password, write it down and keep it in a secure place and tell only the designated user the password.

Main Node Number - Restrict access to the Main node number.

Standby Node Number - Restrict access to the Standby node number.

Clock mode field:

The "Clock mode" field becomes active when selecting the "Set Server Date/Time" command.

1. Click on the button to the right of the "Clock mode" field. The "RealFlex Hardware Clock Mode: *" window will appear which will list by name, each clock mode defined in the RealFlex system. You will note that mode names are presented alphabetically.

   If the window is full, use the or buttons located in the upper left corner of the window to find the mode needed.

2. Select the desired clock mode from the "RealFlex Hardware Clock Mode: *" window. Choices are:

   Local Time (Default) - On the RealFlex4 PC it uses QNX 4. The user is allowed to select if he/she wishes to work in local time (taking into account summer/winter time and number of hours from GMT).

   UTC - Coordinated Universal Time (UTC) is the international time standard. It is the current term for what was commonly referred to as Greenwich Meridian Time (GMT). Zero (0) hours UTC is midnight in Greenwich England, which lies on the zero longitudinal meridian. Universal time is based on a 24 hour clock, therefore, afternoon hours such as 4 pm UTC are expressed as 16:00 UTC (sixteen hours, zero minutes).

   Since a day is 24 hours long, the world may be split into 15 degree wide longitudinal bands (360 degrees/24 hours). Each band represents one hour. As an example, Huntsville Alabama is located at approximately 90 degrees west longitude, hence, local time lags UTC time by 6 hours (90/15, assuming Central Standard Time, 5 hours in Central Daylight Time). So, if the universal time is 14:30 UTC, United States Central Standard Time would be 8:30 am CST.

When a user selects the "Set Server Time/Date" command from the "Utilities" menu in the Flex.View application window, they are presented with the "Set Server Time/Date" dialog box.

Display field:

The "Display" field becomes active when selecting the "Open Display" command.

1. Click on the button to the right of the "Display" field. The "Select Display: *" window will appear.

2. Select the desired Display from the "Select Display: *" window, which will list all defined graphic displays available for the project, sorted alphabetically by name.

   If all selections are not shown and the window is full, use the or buttons located in the upper left corner of the window to find the desired name.

Help file field:

The "Help file" field becomes active when selecting the "Remote Modules Help" command.

1. Click on the button to the right of the "Help file" field. The "Remote Modules Help: *" window will appear.

2. Select the desired Help file from the "Remote Modules Help: *" window, which will list all help files available on the RealFlex QNX server, sorted alphabetically by name.

   If all selections are not shown and the window is full, use the or buttons located in the upper left corner of the window to find the desired name.

Journal field:

The "Journal" field becomes active when selecting the "Project Journal" command.

1. Click on the button to the right of the "Journal" field. The "Journal: *" window will appear.

2. Select the desired Journal from the "Journal: *" window, which will list by name, each Journal defined in the RealFlex system. You will note that Journal names are presented alphabetically.

   If the window is full, use the or buttons located in the upper left corner of the window to find the Journal needed.

PCU field:

The "PCU" field becomes active when selecting the "Active Alarms", "Hist. Alarm/Event" and "PCU Summary" commands.

1. Click on the button to the right of the "PCU" field. The "Select PCU: *" window will appear.

2. Select the desired PCU from the "Select PCU: *" window, which will list by name, each PCU defined in the RealFlex system. You will note that PCU names are presented alphabetically.

   If the window is full, use the or buttons located in the upper left corner of the window to find the PCU needed.

Procedure field:

The "Procedure" field becomes active when selecting the "Run Remote Procedure" command.

1. Click on the button to the right of the "Procedure" field. The "Select Remote Procedure: *" window will appear which will list by name, each QNX procedure defined in the RealFlex system. You will note that procedure names are presented alphabetically.

   If the window is full, use the or buttons located in the upper left corner of the window to find the procedure needed.

2. Select the desired procedure from the "Select Remote Procedure: *" window. Choices are:

   Start RF - RealFlex creates a command that will start RealFlex from Flex.View.

   Stop RF - RealFlex creates a command that will stop RealFlex from Flex.View.

   Restart RF - RealFlex creates a command that will restart RealFlex from Flex.View.

   RF DB init - RealFlex initializes the database on the local machine.

   AutoUpdate - RealFlex runs the script file "AutoUpdate" from the RealFlex/QNX system which updates Flex.View with any changes made to the database on the RealFlex/QNX system side since the last AutoUpdate was run.

   Crontab init - A file on RealFlex QNX PC that stores scheduled tasks. Crontab Init reads this text file and implements the schedules found inside this file.

3. Complete the "Arguments" field as described above.

Program field:

The "Program" field becomes active when selecting the "Run Local Program" command.

1. Click on the button to the right of the "Program" field. A "Browse" dialog box will appear.

2. Click on the button to the right of the "Files of type" field and select from the pop-up list, either Execute Files (*.exe), Command Files (*.com), Batch Files (*.bat) or All Files as required.

3. Look through the directories on your PC and select the required application, command, batch file etc., then select **Open**.

   You will be returned to the "Command Properties" window where the name of the selected application, command, batch file etc., will be added to the "Program" field.

4. Complete the "Arguments" field as described above.

Project field:

The "Project" field becomes active when selecting the "Open Project" command.

1. Click on the button to the right of the "Project" field. The "Open Project" window will appear.

2. Select required Project form the "Open Project" window.

Report File field:

The "Report file" field becomes active when selecting the "Open Flex.Report File" command.

1. Click on the button to the right of the "Report file" field. The "Select Flex.Report File: *" window will appear which will list by name, each Report defined in the RealFlex system. You will note that Report names are presented alphabetically.

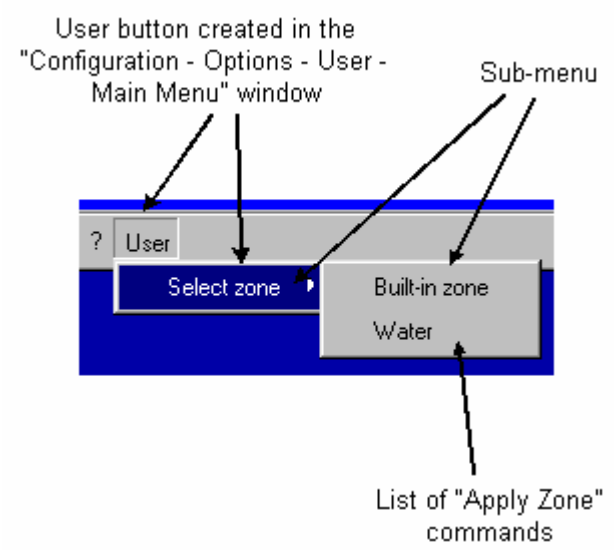
   If the window is full, use the or buttons located in the upper left corner of the window to find the Report needed.

2. Select the desired Report from the "Select Flex.Report File: *" window.

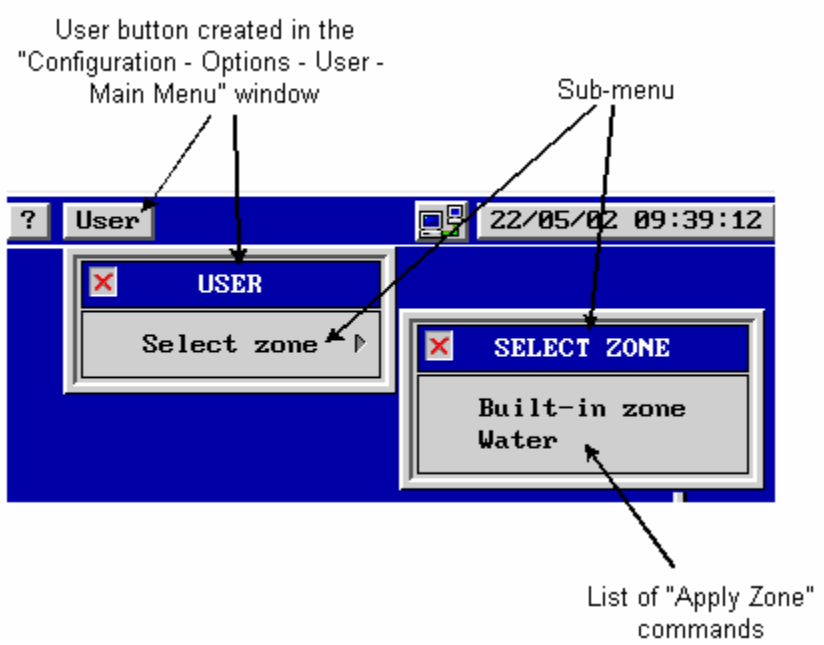
Zone field:

The "Zone" field becomes active when selecting the "Apply Zone" command.

Note: The "Apply Zone" command is used when the "Select only one zone at a time from Main Menu" option is selected in the "Configuration - Options - Zone Settings" window. A user would need to create a user button or a sub-menu for an existing user button with a title of "Select zone". A sub-menu would then need to be added listing all the assigned zones using the "Apply Zone" command. An example is shown below:



Microsoft Windows look and feel



RealFlex4 look and feel

1. Click on the button to the right of the "Zone" field. The "Select Zone: *" window will appear which will list by name, each Zone defined in the RealFlex system. You will note that Zone names are presented alphabetically.

   If the window is full, use the or buttons located in the upper left corner of the window to find the Zone needed.

2. Select the desired Zone from the "Select Zone: *" window.

4.4 Displays

4.4.1 Select Displays

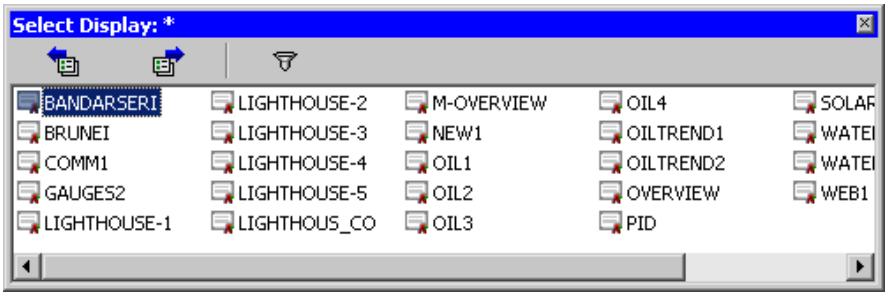
The "Displays" menu provides access to graphic representations of plant processes or field data as designed by the system implementor using the Flex.Builder application.

For Microsoft Windows look and feel:

➔ **To select a graphic display:**

 Click on the **Displays** menu button.

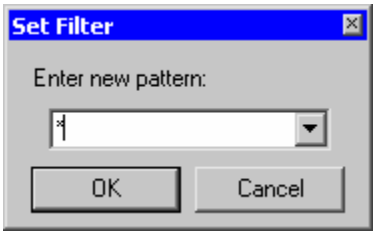
The "Select Display: *" window appears listing all defined graphic displays available for the project, sorted alphabetically by name. This menu serves as an opening menu for the realtime display process.



If all selections are not shown and the window is full, clicking on the buttons located in the toolbar will scroll the list left or right to the desired name. You can also use the scroll bar if the required Display name is not visible.

➔ **To locate a specific name:**

1. Click on the button. The "Set Filter" dialog box will appear:



2. Enter a text string to search for. For example, if you wanted to locate all displays with "xyz" in the name, you would enter "*xyz*" and click on the **OK** button.

   The "Select Display: *" window will change to list only those displays containing "xyz" in the name.

   The "*" and last nine search patterns are saved and can be recalled by clicking on the button and selecting required search pattern from the drop-down list.

➔ **To select a display for viewing:**

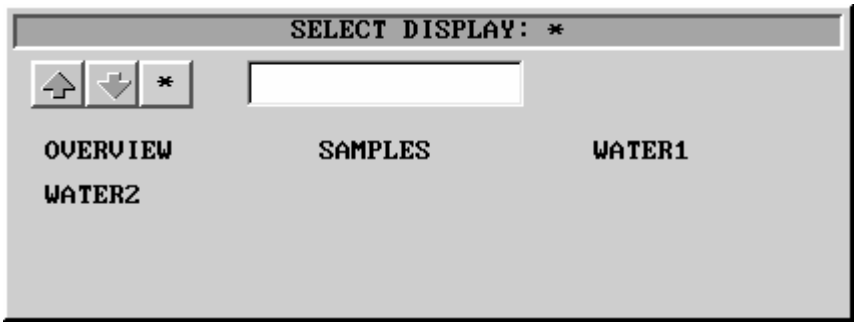
 Click on the display name required.

For RealFlex look and feel:

➔ **To select a graphic display:**

1. Click on the **Displays** menu button.

   The "Select Display: *" window appears listing all defined graphic displays available for the project, sorted alphabetically by name. This menu serves as an opening menu for the realtime display process.



   If all selections are not shown and the window is full, clicking on the buttons located in the upper left corner of the window will scroll the list one page up or down to the desired name.

   Note: The Keypad arrow keys do not allow you to scroll through pages in this menu.

➔ **To locate a specific name:**

 Click on the asterisk (*) button. A pop-up window will appear:

   Enter a text string to search for.

   For example, if you wanted to locate all displays with "xyz" in the name, you would enter "*xyz*" and press **Enter**. The "Select Display: *" window will change to list only those displays containing "xyz" in the name.

   You may also choose to simply type the name (or first letters of a name) from the keyboard in the field at the top of the "Select Display: *" window. A box will appear around the closest matching name.

➔ **To select a display for viewing:**

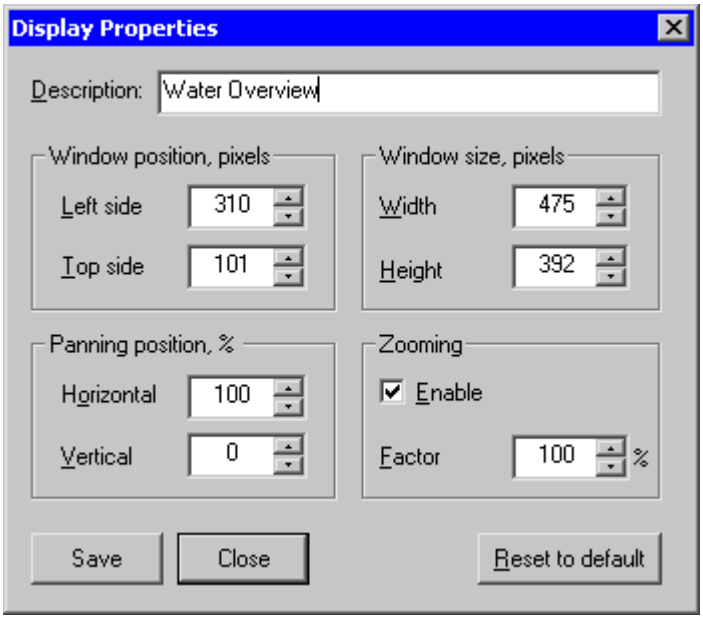
 Click on the display name required.

Note: If no selections are made from the Select Display window within 30 seconds, the window will disappear.

4.4.2 Display properties window

➔ **To move, size, pan and zoom within displays:**

 Right-click on the open display and select **Properties** from the pop-up menu. The "Display Properties" window will appear:



Using the spinner buttons you can change the displays position in the screen, size, panning position and zooming factor.

Note: As you click on the spinner buttons, the display being altered will actively change on the screen.

Once you have made your changes, click on the **Save** button.

If you want to return the display to its original size and position, click on the **Reset to default** button.

If you want to abandon the changes you have made, click on the **Close** button.

4.5 ? (Help)

4.5.1 Help

The "Help" command links you to the Flex.View on-line Help and provides Help topics and tips to help you accomplish your tasks.

➔ **To access the on-line Help:**

- Click on the or (Help) button.

  Shortcut: Keypad **F1**

See also, Section 4.2.6, “Remote Modules Help” from the “Utilities” menu.

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